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I

PRESENTED BY

Chief of ordnance, U.S.A

REPORT

OF THE

TESTS OF METALS

AND

OTHER MATERIALS

FOR

INDUSTRIAL PURPOSES

MADE WITH THE

UNITED STATES TESTING MACHINE AT WATERTOWN ARSENAL,
MASSACHUSETTS,

DURING

THE YEAR ENDED JUNE 30, 1886.

IN TWO PARTS.
PART I.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1889.

49TH CONGRESS, 2d Session. | HOUSE OF REPRESENTATIVES. | Ex. Doc. No. 31.

SDN
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1886
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TESTS OF IRON, STEEL, AND OTHER MATERIALS.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

With a letter from the Chief of Ordnance, U. S. Army, a report of tests of iron and steel and other materials for industrial purposes.

DECEMBER 14, 1886.—Referred to the Committee on Manufactures and ordered to be printed.

WAR DEPARTMENT,
Washington City, December 13, 1886.

The Secretary of War has the honor to transmit to Congress a letter of the Chief of Ordnance, U. S. Army, dated the 29th ultimo, and its accompanying report of "Tests of iron and steel and other materials for industrial purposes," made at the Watertown Arsenal with the United States testing-machine during the fiscal year ending June 30, 1886.

The Chief of Ordnance concurs in the recommendation of the commandant of the arsenal that a small machine should be procured to test minor specimens in order to relieve the large machine from such work and confine its use to the testing of full-size members of structures, for which it was specially designed. He expresses the opinion that the distribution of copies of these reports should be made as extended as possible in order to meet the frequent and persistent applications therefor.

The views of the Chief of Ordnance are concurred in by this Department.

WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

26975 15

ORDNANCE OFFICE, WAR DEPARTMENT,
Washington, D. C., November 29, 1886.

SIR: I have the honor to submit herewith for transmission to Congress as provided by law, Maj. F. H. Parker's annual report of "Tests of iron and steel and other materials for industrial purposes," made at the Watertown Arsenal, Watertown, Mass., with the United States testing-machine, during the fiscal year ending 30th June, 1886.

I concur in the recommendation for a small machine to test minor specimens.

The object is to relieve the large machine from such work and confine its use to the testing of full-size members of structures, for which it was specially designed. The results would be of the greatest advantage to engineers throughout the country.

The frequent and persistent calls for copies of these reports conclusively prove their practical value, and their distribution should be made as extended as possible.

Very respectfully, your obedient servant,

S. V. BENÉT,
Brigadier-General, Chief of Ordnance.

The SECRETARY OF WAR.

WATERTOWN ARSENAL,
Watertown, Mass., August 31, 1886.

SIR: I have the honor to submit herewith the annual report of tests of iron, steel and other materials made at this arsenal with the United States testing-machine during the fiscal year ending June 30, 1886.

The testing work has been continuous and uninterrupted, the testing-machine having been used to its full capacity by Mr. J. E. Howard, the expert engineer of tests.

There were tested during the year a total of 2,132 specimens, of which number 1,895 were public and 237 private tests. Of the private tests 149 were from Massachusetts, 1 from New Hampshire, 7 from Rhode Island, 10 from New York, 35 from Pennsylvania, 2 from Kentucky, 2 from Missouri, 14 from Ohio, 6 from Minnesota, 11 from Montreal, P. Q. A list of the parties for whom tests were made is appended.

A large portion of the public tests were made for the Ordnance Department in its test of materials for gun construction and in experiments connected therewith.

Of the miscellaneous tests some of the most interesting are the continuation and completion of the tests of steel-plate riveted joints, and of a series of brick piers, both continued from the report of the preceding year. Also the commencement of a series of temperature tests, the object of which is to investigate the effect of different degrees of heat upon the strength and elastic limit of iron and steel bars. Also tests of railway-car axles which have been run different lengths of time. Also of the cubic compression of various metals and wood and a series of tests for the U. S. Geological Survey on the compression of metals and chemical salts in a hollow cylinder.

I renew my recommendations previously made for the procurement of an additional smaller testing-machine to work on the numerous small specimens used in testing gun material and in other cases where such pieces are necessarily used, reserving the larger machine for tests of large specimens and full-size members of structures which it alone can accommodate and test and for which it was specially designed. Being relieved of so much routine work it will give more opportunity to carry on series of industrial tests and experiments, which will be of interest and advantage to the engineering world.

The desirability of a more liberal distribution of the results of the testing work done by the Government as exhibited in the annual report is urged. Applications are frequently made for copies of these reports, and when it is understood that the reports for 1884 and 1885 are not yet out, and that those previously printed are but limited in number, it would seem as if the full benefits of the work and of the annual appropriations were far from being realized. It is believed that the information the reports contain is valuable and should be widely disseminated among engineers and builders.

The receipts and expenditures for the year were as follows:

Testing-machine, 1886.

Amount appropriated for testing-machine and testing work	$10,000.00
Amount received during the fiscal year for private tests	466.82
	10,466.82
Expended for services and labor	8,043.96
Expended for steam-power, tools, implements, repairs, and improvements	2,379.66
Deposited to credit of Treasurer of the United States	43.20
	10,466.82

I also send herewith the reports of chemical analyses made during the year by Capt. John Pitman, Ordnance Department, U. S. Army.

Very respectfully, your obedient servant,

F. H. PARKER,
Major, Ordnance Department, U. S. Army, Commanding.

THE CHIEF OF ORDNANCE, U. S. ARMY,
Washington, D. C.

WATERTOWN ARSENAL,
Watertown, Mass., December 17, 1885.

SIR: I have the honor herewith to inclose my report of analyses of water from wells near machine-shop and officers' quarters at Sandy Hook, N. J. The samples were received September 2. The analysis was made on the request of Captain Whipple.

I remain, very respectfully, your obedient servant,

J. PITMAN,
Captain of Ordnance.

MAJ. F. H. PARKER,
Commanding.

Analyses of well-waters received from Sandy Hook September 2, 1885.

	From machine-shop.	From officer's quarters.	Remarks.
Ammonia (free)	.045	.015	Parts per 1,000,000.
Albuminoid ammonia	.080	.055	Do.
Sulphuric acid	.0352	.0170	Grams per liter.
Chlorine	.0225	.0142	Do.
Soluble residue	.1332	.1255	Do.
Insoluble residue	.1005	.1061	Do.
Silica	.0014	.0013	Soluble residue, grams per liter.
Iron and alumina	.0005	.0012	Do.
Lime	.0109	.0127	Do.
Magnesia	.0053	.0117	Do.
Soda	.0419	.0296	Do.
Potash	.0042	.0003	Do.
Silica	.0074	.0087	Insoluble residue, grams per liter.
Iron and alumina	.0015	.0024	Do.
Lime	.0408	.0412	Do.
Magnesia	.0083	.0064	Do.

WATERTOWN ARSENAL,
Watertown, Mass., June 9, 1886.

SIR: In accordance with your order of March 8 I have the honor to report as follows as regards two samples of sheet metal received from Colonel Crispin March 8:

	Regular cartridge metal.	Aluminium bronze.
Elastic limit .... pounds	12,591	26,608
Tensile strength .... do	38,341	49,415
Elongation in 5 inches .... per cent	44	44.8
Thickness .... inch	.0925	.0917
Specific gravity	8.8477	8.4439

RESULTS OF ANALYSIS.

	Per cent.	Per cent.
Copper	91.82	96.44
Zinc	7.92	0.04
Iron	0.09	0.19
Aluminium	....	3.02
Silver	0.04	....
Arsenic	0.05	....
Antimony	0.04	....
Silicon	....	0.53

Very respectfully, your obedient servant,

JOHN PITMAN,
Captain of Ordnance.

Maj. F. H. PARKER,
Commanding.

WATERTOWN ARSENAL,
Watertown, Mass., June 22, 1886.

SIR: I have the honor to report the following as the result obtained from the analysis from test specimens marked $\genfrac{}{}{0pt}{}{32\ T_4}{B\ T_1}$ and $\genfrac{}{}{0pt}{}{32\ T_4}{B\ T_2}$, having been taken from the breech-end of tube for the 3″.2 steel breech loading rifle No. 1, now in the process of manufacture at this arsenal:

	Per cent.		Per cent.
Silicon	0.127	Manganese	0.671
Phosphorus	0.033	Copper	0.02
Sulphur	0.024	Cobalt	0.021
Total carbon	0.377	Nickel	0.034

I remain, very respectfully, your obedient servant,

JOHN PITMAN,
Captain of Ordnance.

Maj. F. H. PARKER,
Commanding.

WATERTOWN ARSENAL,
Watertown, Mass., January 1, 1886.

SIR: I have the honor to report the following results obtained from gas-coal received by gas-works December 16, 1885:

	Per cent.
Moisture	0.92
Volatile matter	31.04
Combustible matter	61.58
Ash (light lead color)	6.46
	100.00
Sulphur	2.05

I remain, very respectfully, your obedient servant,

JOHN PITMAN,
Captain of Ordnance.

Maj. F. H. PARKER,
Commanding.

REPORT OF TESTS

ON THE

STRENGTH OF STRUCTURAL MATERIAL

MADE AT THE

WATERTOWN ARSENAL, MASS.,

DURING THE

FISCAL YEAR ENDED JUNE 30, 1886.

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3".2 STEEL B. L. RIFLES.

STEEL SPECIMENS

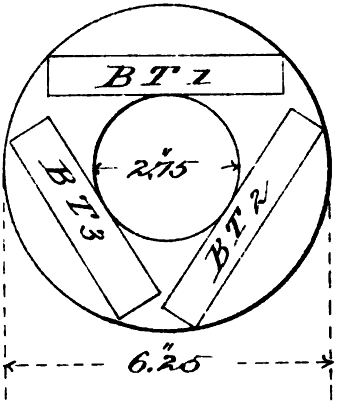
FROM

TUBES, JACKETS, TRUNNION-HOOPS, BREECH-BLOCKS, BASE-RINGS, SLEEVES, AND OBTURATOR STEMS.

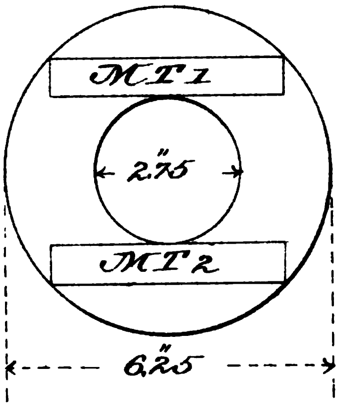
Tube 3.2" Rifle

General drawing showing
positions from whence
specimens were taken

Breech end



Muzzle end



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TUBES.—3.2 INCH B. L. RIFLES.

No. 1689.

Marks, $\substack{32\ T_1 \\ B\ T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	0.	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000500	.000150	0.	....	
4,000	20,000	.000700	.000200	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.001000	.000150	0.	....	
7,000	35,000	.001150	.000150	0.	....	
8,000	40,000	.001300	.000150	0.	....	
9,000	45,000	.001400	.000100	....	....	
9,600	48,000	.001500	.000100	....	....	
9,800	49,000	.001550	.000050	....	....	
10,000	50,000	.001600 .002700	.000050 .001100	.000 00	.000100	Elastic limit.
10,200	51,000	.005200	.002500	....	....	
10,400	52,000	.006200	.001000	....	....	
10,600	53,000	.007200	.001000	....	....	
10,800	54,000	.008300	.001100	....	....	
11,000	55,000	.009450	.001150	.007350	.007250	
11,200	56,000	.010000	.000550	....	....	
11,400	57,000	.011000	.001000	....	....	
11,600	58,000	.012250	.001250	....	....	
11,800	59,000	.013600	.001350	....	....	
12,000	60,000	.014650	.001050	....	....	
12,400	62,000	.017200	.002550	....	....	
12,800	64,000	.019800	.002600	....	....	
13,200	66,000	.022550	.002750	....	....	
13,600	68,000	.025600	.003050	....	....	
14,000	70,000	.028750	.003150	....	....	
14,400	72,000	.032550	.003800	....	....	
14,800	74,000	.036500	.003950	....	....	
15,200	76,000	.041500	.005000	....	....	
15,600	78,000	.047300	.005800	....	....	
16,000	80,000	.055500	.008200	....	....	
16,400	82,000	.067000	.011500	....	....	
16,800	84,000	.0850	.0180	....	....	
17,070	85,350	.1300	.0450	....	....	Tensile strength.

General summary.

Specific gravity		7.8615
Tensile strength per square inch of original section	pounds..	85,350
Elastic limit per square inch of original section	do....	50,000
Elongation per inch after rupture	inch..	0.2400
Elongation per inch under strain at elastic limit	do....	.001600
Reduction in diameter at point of rupture	do....	.155
Reduction in area after rupture, per centum of original section		51.9
Position of rupture		″.1 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.32*, ″.16

No. 1690.

Marks, $^{32\ T_1}_{B\ T_2}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000200	.000200	0.	....	
2, 000	10, 000	.000400	.000200	0.	....	
3, 000	15, 000	.000600	.000200	0.	....	
4, 000	20, 000	.000750	.000150	0.	....	
5, 000	25, 000	.000950	.000200	0.	....	
6, 000	30, 000	.001100	.000150	0.	....	
7, 000	35, 000	.001250	.000150	.000050	.000050	
8, 000	40, 000	.001350	.000100	.000050	0.	
9, 000	45, 000	.001550	.000200	.000050	0.	
9, 600	48, 000	.001750	.000200	....	....	
9, 800	49, 000	.001800	.000050	....	....	Elastic limit.
10, 000	50, 000	.002700	.001100	.001000	.000950	
10, 200	51, 000	.003800	.001100	....	....	
10, 400	52, 000	.005100	.001300	....	....	
10, 600	53, 000	.007100	.002000	....	....	
10, 800	54, 000	.008500	.001400	....	....	
11, 000	55, 000	.009300	.000800	.007250	.006250	
11, 200	56, 000	.010100	.000800	....	....	
11, 400	57, 000	.011100	.001000	....	....	
11, 600	58, 000	.012250	.001150	....	....	
11, 800	59, 000	.013500	.001250	....	....	
12, 000	60, 000	.014750	.001250	....	....	
12, 400	62, 000	.017100	.002350	....	....	
12, 800	64, 000	.019600	.002500	....	....	
13, 200	66, 000	.022500	.002900	....	....	
13, 600	68, 000	.025750	.003250	....	....	
14, 000	70, 000	.028750	.003000	....	....	
14, 400	72, 000	.032500	.003750	....	....	
14, 800	74, 000	.036550	.004050	....	....	
15, 200	76, 000	.041500	.004950	....	....	
15, 600	78, 000	.048000	.006500	....	....	
16, 000	80, 000	.055250	.007250	....	....	
16, 400	82, 000	.068250	.013000	....	....	
16, 800	84, 000	.087500	.021250	....	....	
16, 980	84, 900	.1150	.0275	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	84, 900
Elastic limit per square inch of original section	do....	49, 000
Elongation per inch after rupture	inch..	0. 2000
Elongation per inch under strain at elastic limit	do....	.001800
Reduction in diameter at point of rupture	do....	.114
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		⅜ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.30*, ″.10

No. 576.

Marks, $^{32\,T_1}_{B\,T_2}$
Length, 4″.001.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000200	.000100	0.	....	
7,500	15,000	.000300	.000100	0.	....	
....	....	....	....	.021650	.021650	Load accidentally increased, causing permanent set of.
47,200	94,400	....	....	....	....	Ultimate strength.

No. 1691.

Marks, $\substack{32\ T_1 \\ M\ T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000900	.000200	0.	....	
7,000	35,000	.001050	.000150	0.	....	
8,000	40,000	.001200	.000150	0.	....	
9,000	45,000	.001350	.000150	0.	....	
9,600	48,000	.001450	.000100	....	....	Elastic limit.
9,800	49,000	.001950	.000500	....	....	
10,000	50,000	.002750	.000800	.001150	.001150	Rested under initial load one hour.
10,200	51,000	.003300	.000550	....	....	
10,400	52,000	.003850	.000550	....	....	
10,600	53,000	.004900	.001050	....	....	
10,800	54,000	.006450	.001550	....	....	
11,000	55,000	.008000	.001550	.006100	.004950	
11,200	56,000	.008750	.000750	....	....	
11,400	57,000	.009450	.000700	....	....	
11,600	58,000	.010500	.001050	....	....	
11,800	59,000	.012100	.001600	....	....	
12,000	60,000	.013400	.001300	....	....	
12,400	62,000	.015750	.002350	....	....	
12,800	64,000	.018300	.002550	....	....	
13,200	66,000	.021000	.002700	....	....	
13,600	68,000	.023600	.002600	....	....	
14,000	70,000	.026500	.002900	....	....	
14,400	72,000	.030600	.004100	....	....	
14,800	74,000	.034550	.003950	....	....	
15,200	76,000	.038650	.004100	....	....	
15,600	78,000	.044500	.005850	....	....	
16,000	80,000	.051000	.006500	....	....	
16,400	82,000	.061000	.010000	....	....	
16,800	84,000	.074500	.013500	....	....	
17,040	85,200	.1035	.0290	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	85,200
Elastic limit per square inch of original section	do	48,000
Elongation per inch after rupture	inch	0.1500
Elongation per inch under strain at elastic limit	do	.001450
Reduction in diameter at point of rupture	do	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		½ inch from neck
Character of broken surface		granular, dull spot at circumference
Elongation of inch sections		″.24*, ″.06

No. 1692.

Marks, $\begin{smallmatrix}32 & T_1\\ M & T_2\end{smallmatrix}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.		
2, 000	10, 000	.000250	.000150	0.		
3, 000	15, 000	.000400	.000150	0.		
4, 000	20, 000	.000550	.000150	0.		
5, 000	25, 000	.000700	.000150	0.		
6, 000	30, 000	.000850	.000150	0.		
7, 000	35, 000	.001000	.000150	0.		
8, 000	40, 000	.001150	.000150	0.		
8, 200	41, 000	.001150	0.			
8, 400	42, 000	.001200	.000050			
8, 600	43, 000	.001300	.000100			Elastic limit.
8, 800	44, 000	.002500	.001200			
9, 000	45, 000	.009500	.007000	.007750	.007750	
9, 200	46, 000	.010150	.000650			
9, 400	47, 000	.010100	.000250			
9, 600	48, 000	.011300	.000900			
9, 800	49, 000	.012550	.001250			
10, 000	50, 000	.013750	.001200	.011750	.004000	
10, 200	51, 000	.015050	.001300			
10, 400	52, 000	.016000	.000950			
10, 600	53, 000	.017200	.001200			
10, 800	54, 000	.018500	.001300			
11, 000	55, 000	.019600	.001100			
11, 200	56, 000	.021000	.001400			
11, 400	57, 000	.022550	.001550			
11, 600	58, 000	.024050	.001500			
11, 800	59, 000	.025600	.001550			
12, 000	60, 000	.027150	.001550			
12, 400	62, 000	.030350	.003200			
12, 800	64, 000	.034500	.004150			
13, 200	66, 000	.038500	.003900			
13, 600	68, 000	.043500	.005100			
14, 000	70, 000	.050000	.006500			
14, 400	72, 000	.058500	.008500			
14, 800	74, 000	.068000	.009500			
15, 200	76, 000	.0800	.0120			
15, 600	78, 000	.1050	.0250			
16, 000	80, 000	.1500	.0450			
16, 020	80, 100	.1750	.0250			Tensile strength.

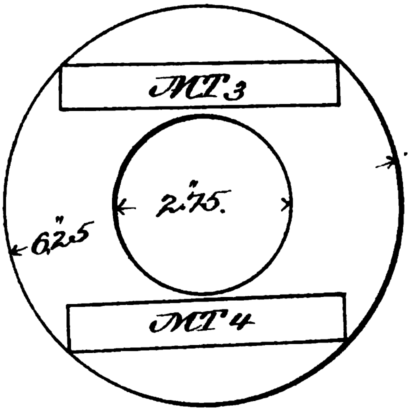
General summary.

Tensile strength per square inch of original section	pounds..	80, 100
Elastic limit per square inch of original section	do ...	43, 000
Elongation per inch after rupture	inch..	0. 2900
Elongation per inch under strain at elastic limit	do....	.001300
Reduction in diameter at point of rupture	do....	.146
Reduction in area after rupture, per centum of original section		49. 1
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.38*, ″.20

Tube No. 1 3½" Rifle.

Additional specimens.

Muzzle end



H Ex 31 49 2

No. 2274.

Marks, $^{32\ T_1}_{M\ T_3}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001250	.000150	0.	....	
8,200	41,000	.001300	.000050	....	....	
8,400	42,000	.001350	.000050	....	....	
8,600	43,000	.001400	.000050	....	....	Elastic limit.
8,800	44,000	.001900	.000500	....	....	
9,000	45,000	.003000	.001100	....	....	
9,200	46,000	.005150	.002150	....	....	
9,400	47,000	.008100	.002950	....	....	
9,600	48,000	.009100	.001000	....	....	
9,800	49,000	.009800	.000700	....	....	
10,000	50,000	.011000	.001200	....	....	
10,400	52,000	.013100	.002100	....	....	
10,800	54,000	.015500	.002400	....	....	
11,200	56,090	.017550	.002050	....	....	
11,600	58 000	.020250	.002700	....	....	
12,000	60,000	.022850	.002600	....	....	
12,400	62,000	.026000	.003150	....	....	
12,800	64,000	.029000	.003000	....	....	
13,200	66,000	.032150	.003150	....	....	
13,600	68,000	.037550	.005400	....	....	
14,000	70,000	.043000	.005450	....	....	
14,400	72,000	.048500	.005500	....	....	
14,800	74,000	.055250	.006750	....	....	
15,200	76,000	.0600	.004750	....	....	
15,600	78,000	.0800	.0200	....	....	
16,000	80,000	.1050	.0250	....	....	
16,210	81,050	.1600	.0550	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	81,050
Elastic limit per square inch of original section	do....	43,000
Elongation per inch after rupture	inch..	0 2500
Elongation per inch under strain at elastic limit	do....	.001400
Reduction in diameter at point of rupture	do....	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		″.6 from neck
Character of broken surface		granular, dull spot at circumference
Elongation of inch sections		″.31*, ″.19

No. 2275.

Marks, $\substack{32\ T_1 \\ M\ T_4}$

Diameter, ″.505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000400	.000200	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001000	.000150	0.	....	
8,000	40,000	.001150	.000150	0.	....	
8,200	41,000	.001200	.000150	....	....	
8,400	42,000	.001250	.000050	....	....	
8,600	43,000	.001250	0.	....	....	
8,800	44,000	.001300	.000050	....	....	
9,000	45,000	.001350	.000050	....	....	
9,200	46,000	.001400	.000050	....	....	
9,400	47,000	.001450	.000050	....	....	
9,600	48,000	.001550	.000100	....	....	Elastic limit.
9,800	49,000	.001900	.000350	....	....	
10,000	50,000	.003700	.001800	....	....	
10,400	52,000	.005650	.001950	....	....	
10,800	54,000	.009000	.003350	....	....	
11,200	56,000	.011350	.002350	....	....	
11,600	58,000	.013500	.002150	....	....	
12,000	60,000	.016050	.002550	....	....	
12,400	62,000	.018500	.002450	....	....	
12,800	64,000	.021200	.002700	....	....	
13,200	66,000	.024350	.003150	....	....	
13,600	68,000	.027150	.002800	....	....	
14,000	70,000	.031250	.004100	....	....	
14,400	72,000	.035250	.004000	....	....	
14,800	74,000	.039750	.004500	....	....	
15,200	76,000	.045250	.005500	....	....	
15,600	78,000	.052250	.007000	....	....	
16,000	80,000	.0600	.007750	....	....	
16,400	82,000	.0800	.0200	....	....	
16,800	84,000	.1100	.0300	....	....	
16,880	84,400	.1400	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	84,400
Elastic limit per square inch of original section	do....	48,000
Elongation per inch after rupture	inch..	.1500
Elongation per inch under strain at elastic limit	do....	.001550
Reduction in diameter at point of rupture	do....	.065
Reduction in area after rupture, per centum of original section		23.9
Position of rupture		″.65 from neck
Character of broken surface		granular, dull flaky spot near the circumference
Elongation of inch sections		″.18*, ″.12

NEW TUBE No. 1.

No. 2590.

Marks, $\frac{32\,T_1}{B\,T_4}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000350	.000250	0.	....	
3,000	15,000	.000500	.000150	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001350	.000250	....	....	
9,000	45,000	.001500	.000150	....	....	
10,000	50,000	.001650	.000150	....	....	
10,200	51,000	.001650	0.	....	....	
10,400	52,000	.001700	.000050	....	....	
10,600	53,000	.001800	.000100	....	....	
10,800	54,000	.001850	.000050	....	....	
11,000	55,000	.001900	.000050	....	....	
11,200	56,000	.002000	.000100	....	....	Elastic limit.
11,400	57,000	.002250	.000250	....	....	
11,600	58,000	.003000	.000750	....	....	
11,800	59,000	.003300	.000300	....	....	
12,000	60,000	.003800	.000500	....	....	
12,400	62,000	.006250	.002450	....	....	
12,800	64,000	.010000	.003750	....	....	
13,200	66,000	.012000	.002000	....	....	
13,600	68,000	.014000	.002000	....	....	
14,000	70,000	.016500	.002500	....	....	
14,400	72,000	.019050	.002550	....	....	
14,800	74,000	.021550	.002500	....	....	
15,200	76,000	.024250	.002700	....	....	
15,600	78,000	.027500	.003250	....	....	
16,000	80,000	.031250	.003750	....	....	
16,400	82,000	.035600	.004350	....	....	
16,800	84,000	.039500	.003900	....	....	
17,200	86,000	.045250	.005750	....	....	
17,600	88,000	.0500	.004750	....	....	
18,000	90,000	.0550	.0050	....	....	
18,400	92,000	.0800	.0250	....	....	
18,680	93,400	.1300	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	93,400
Elastic limit per square inch of original section	do....	56,000
Elongation per inch after rupture	inch..	.1850
Elongation per inch under strain at elastic limit	do....	.002000
Reduction in diameter at point of rupture	do....	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		¼″ from neck
Character of broken surface		silky, flaky
Elongation of inch sections		″.30*, ″.07

No. 2591.

Marks, $^{32\,T_1}_{B\,T_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000500	.000150	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001150	.000150	0.	....	
8,000	40,000	.001350	.000200	0.	....	
9,000	45,000	.001500	.000150	....	....	
10,000	50,000	.001650	.000150	....	....	
10,200	51,000	.001650	0.	....	....	
10,400	52,000	.001700	.000050	....	....	
10,600	53,000	.001750	.000050	....	....	
10,800	54,000	.001800	.000050	....	....	
11,000	55,000	.001900	.000100	....	....	Elastic limit.
11,200	56,000	.002250	.000350	....	....	
11,400	57,000	.003000	.000750	....	....	
11,600	58,000	.003900	.000900	....	....	
11,800	59,000	.004350	.000450	....	....	
12,000	60,000	.005650	.001300	....	....	
12,400	62,000	.008000	.002350	....	....	
12,800	64,000	.010500	.002500	....	....	
13,200	66,000	.012100	.001600	....	....	
13,600	68,000	.014050	.001950	....	....	
14,000	70,000	.016000	.001950	....	....	
14,400	72,000	.018500	.002500	....	....	
14,800	74,060	.020600	.002100	....	....	
15,200	76,000	.023000	.002400	....	....	
15,600	78,000	.026050	.003050	....	....	
16,000	80,000	.029550	.003500	....	....	
16,400	82,000	.032750	.003200	....	....	
16,800	84,000	.036000	.003250	....	....	
17,200	86,000	.040500	.004500	....	....	
17,600	88,000	.045750	.005250	....	....	
18,000	90,000	.0500	.004250	....	....	
18,400	92,000	.0600	.0100	....	....	
18,800	94,000	.0750	.0150	....	....	
19,200	96,000	.1050	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96,000
Elastic limit per square inch of original section	do....	55,000
Elongation per inch after rupture	inch..	0.2050
Elongation per inch under strain at elastic limit	do....	.001900
Reduction in diameter at point of rupture	do....	.105
Reduction in area after rupture, per centum of original section	t	37.1
Position of rupture		″.75 from neck
Character of broken surface		silky, 80 per centum; granular, 20 per centum
Elongation of inch sections		″.13, ″.28*

No. 671.

Marks, $\substack{32\ T_1 \\ B\ T_2}$
Length, 4″.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000300	.000200	0.	....	
7,500	15,000	.000433	.000133	0.	....	
10,000	20,000	.000600	.000167	0.	....	
12,500	25,000	.000767	.000167	0.	....	
15,000	30,000	.000967	.000200	0.	....	
17,500	35,000	.001100	.000133	....	....	
20,000	40,000	.001300	.000200	....	....	
20,500	41,000	.001367	.000067	....	....	
21,000	42,000	.001400	.000033	....	....	
21,500	43,000	.001467	.000067	....	....	
22,000	44,000	.001500	.000033	....	....	
22,500	45,000	.001533	.000033	....	....	
23,000	46,000	.001600	.000067	....	....	
23,500	47,000	.001667	.000067	....	....	
24,000	48,000	.001733	.000066	....	....	Elastic limit.
24,500	49,000	.001867	.000134	....	....	
25,000	50,000	.002133	.000266	....	....	
25,500	51,000	.002900	.000767	....	....	
26,000	52,000	.003400	.000500	....	....	
26,500	53,000	.004200	.000800	....	....	
27,000	54,000	.005200	.001000	....	....	
47,100	91,200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	48,000
Compression per inch under stress of elastic limit	inch..	001733
Ultimate strength per square inch of original section	pounds..	94,200
Manner of failure		triple flexure

No. 2592.

Marks, $^{32\ T_1}_{M\ T_5}$
Diameter, ".505.
Sectional area, ".20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.		
2,000	10,000	.000250	.000150	0.		
3,000	15,000	.000450	.000200	0.		
4,000	20,000	.000550	.000100	0.		
5,000	25,000	.000700	.000150	0.		
6,000	30,000	.000900	.000200	0.		
7,000	35,000	.001100	.000200	0.		
8,000	40,000	.001250	.000150	0.		
9,000	45,000	.001400	.000150			
10,000	50,000	.001600	.000200			
10,200	51,000	.001650	.000050			
10,400	52,000	.001700	.000050			
10,600	53,000	.001750	.000050			
10,800	54,000	.001850	.000100			Elastic limit.
11,000	55,000	.002350	.000500			
11,200	56,000	.003200	.000850			
11,400	57,000	.004050	.000850			
11,600	58,000	.006000	.001950			
11,800	59,000	.007600	.001600			
12,000	60,000	.009000	.001400			
12,400	62,000	.010750	.001750			
12,800	64,000	.012750	.002000			
13,200	66,000	.014800	.002050			
13,600	68,000	.017000	.002200			
14,000	70,000	.019050	.002050			
14,400	72,000	.021250	.002200			
14,800	74,000	.024000	.002750			
15,200	76,000	.027000	.003000			
15,600	78,000	.029800	.002800			
16,000	80,000	.033950	.004150			
16,400	82,000	.038500	.004550			
16,800	84,000	.043000	.004500			
17,200	86,000	.046550	.003550			
17,600	88,000	.050000	.003450			
18,000	90,000	.0550	.0050			
18,400	92,000	.0800	.0250			
18,800	94,000	.1050	.0250			
18,920	94,600	.1150	.0100			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	94,600
Elastic limit per square inch or original section	do	54,000
Elongation per inch after rupture	inch	.2650
Elongation per inch under strain at elastic limit	do	.001850
Reduction in diameter at point of rupture	do	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		".65 from neck
Character of broken surface		silky, flaky
Elongation of inch sections		".30*, "23

No. 2593.

Marks, $\frac{32\ T_1}{M\ T_6}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial l
1,000	5,000	.000100	.000100	0.		
2,000	10,000	.000200	.000100	0.		
3,000	15,000	.000350	.000150	0.		
4,000	20,000	.000600	.000250	0.		
5,000	25,000	.000800	.000200	0.		
6,000	30,000	.000950	.000150	0.		
7,000	35,000	.001100	.000150	0.		
8,000	40,000	.001300	.000200	0.		
9,000	45,000	.001500	.000200			
10,000	50,000	.001650	.000150			
10,200	51,000	.001650	0.			
10,400	52,000	.001700	.000050			
10,600	53,000	.001800	.000100			Elastic limit.
10,800	54,000	.002000	.000200			
11,000	55,000	.002200	.000200			
11,200	56,000	.002550	.000350			
11,400	57,000	.004250	.001700			
11,600	58,000	.005600	.001350			
11,800	59,000	.007400	.001800			
12,000	60,000	.008600	.001200			
12,400	62,000	.011000	.002400			
12,800	64,000	.013500	.002500			
13,200	66,000	.015500	.002000			
13,600	68,000	.018250	.002750			
14,000	70,000	.020750	.092500			
14,400	72,000	.023750	.003000			
14,800	74,000	.026800	.003050			
15,200	76,000	.029000	.002200			
15,600	78,000	.032500	.003500			
16,000	80,000	.036750	.004250			
16,400	82,000	.041500	.004750			
16,800	84,000	.047500	.006000			
17,200	86,000	.052500	.005000			
17,600	88,000	.0600	.0075			
18,000	90,000	.0850	.0250			
18,380	91,900	.1350	.0500			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	91,900
Elastic limit per square inch of original section	do....	53,000
Elongation per inch after rupture	inch..	0.2350
Elongation per inch under strain at elastic limit	do....	.00180
Reduction in diameter at point of rupture	do....	.120
Reduction in area after rupture, per centum of original section		43.5
Position of rupture		″.55 from neck
Character of broken surface		silky
Elongation of inch sections		″.14, ″.338

No. 2196.

Marks, $\frac{32\ T_2}{B\ T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	0.00100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000550	.000200	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001050	.000200	0.	....	
8,000	40,000	.001250	.000200	0.	....	
9,000	45,000	.001450	.000200	0.	....	
9,600	48,000	.001600	.000150	....	....	
9,800	49,000	.001650	.000050	....	....	Elastic limit.
10,000	50,000	.003000	.001350	....	....	
10,200	51,000	.004000	.001000	....	....	
10,400	52,000	.005000	.001000	....	....	
10,600	53,000	.006000	.001000	....	....	
10,800	54,000	.007000	.001000	....	....	
11,000	55,000	.008050	.001050	....	....	
11,200	56,000	.009000	.000950	....	....	
11,400	57,000	.010000	.001000	....	....	
11,600	58,000	.010850	.000850	....	....	
11,800	59,000	.011950	.001100	....	....	
12,000	60,000	.013150	.001200	....	....	
12,400	62,000	.015600	.002450	....	....	
12,800	64,000	.017750	.002150	....	....	
13,200	66,000	.020000	.002250	....	....	
13,600	68,000	.022750	.002750	....	....	
14,000	70,000	.025200	.002450	....	....	
14,400	72,000	.028400	.003200	....	....	
14,800	74,000	.031700	.003300	....	....	
15,200	76,000	.036050	.004350	....	....	
15,600	78,000	.040600	.004550	....	....	
16,000	80,000	.046000	.005400	....	....	
16,400	82,000	.052500	.006500	....	....	
16,800	84,000	.0600	.0075	....	....	
17,200	86,000	.0750	.0150	....	....	
17,600	88,000	.1000	.0250	....	....	
17,700	88,500	.1500	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	88,500
Elastic limit per square inch of original section	do	49,000
Elongation per inch after rupture	inch	.2450
Elongation per inch under strain at elastic limit	do	.001650
Reduction in diameter at point of rupture	do	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		″.75 from neck
Character of broken surface		silky, slightly granular
Elongation of inch sections		″.34*, ″.15

No. 2197.

Marks, $\begin{matrix}32\ T_1\\ B\ T_4\end{matrix}$

Diameter, ″.505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	— .000050	— .000050	
2,000	10,000	.000200	.000100	— .000050	0.	
3,000	15,000	.000350	.000150	— .000050	0.	
4,000	20,000	.000550	.000200	— .500050	0.	
5,000	25,000	.000650	.000100	— .000050	0.	
6,000	30,000	.000850	.000200	— .000050	0.	
7,000	35,000	.000950	.000100	— .000050	0.	
8,000	40,000	.001150	.000200	— .000050	0.	
8,600	43,000	.001200	.000050	....	....	
8,800	44,000	.001250	.000050	....	....	Elastic limit.
9,000	45,000	.001550	.000300	....	....	
9,200	46,000	.002200	.000650	....	....	
9,400	47,000	.003250	.001050	....	....	
9,600	48,000	.004600	.001350	....	....	
9,800	49,000	.005350	.000750	....	....	
10,000	50,000	.006600	.001250	....	....	
10,200	51,000	.007250	.000650	....	....	
10,400	52,000	.008250	.001000	....	....	
10,600	53,000	.090250	.001000	....	....	
10,800	54,000	.010500	.001250	....	....	
11,000	55,000	.011500	.001000	....	....	Rested under load one hour.
11,200	56,000	.012500	.001000	....	....	
11,400	57,000	.013000	.000500	....	....	
11,600	58,000	.013900	.000900	....	....	
11,800	59,000	.015100	.001200	....	....	
12,000	60,000	.016700	.001600	....	....	
12,400	62,000	.019000	.002300	....	....	
12,800	64,000	.021150	.002150	....	....	
13,200	66,000	.024250	.003100	....	....	
13,600	68,000	.027250	.003000	....	....	
14,000	70,000	.030000	.002750	....	....	
14,400	72,000	.034000	.004000	....	....	
14,800	74,000	.039000	.005000	....	....	
15,200	76,000	.043000	.004000	....	....	
15,600	78,000	.049500	.006500	....	....	
16,000	80,000	.052250	.002750	....	....	
16,400	82,000	.0650	.012750	....	....	
16,800	84,000	.0800	.0150	....	....	
17,200	86,000	.1100	.0300	....	....	
17,250	86,250	.1500	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	86,250
Elastic limit per square inch of original section	do....	44,000
Elongation per inch after rupture	inch..	.2500
Elongation per inch under strain at elastic limit	do....	.001250
Reduction in diameter at point of rupture	do....	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		1″.00 from neck
Character of broken surface		silky, slightly granular
Elongation of inch sections		″.35, ″.15

No. 614.

Marks, $^{32\,T_2}_{B\,T_2}$
Length, 4″.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000300	.000200	0.	....	
7, 500	15, 000	.000500	.000200	0.	....	
10, 000	20, 000	.000650	.000150	0.	....	
12, 500	25, 000	.000800	.000150	0.	....	
15, 000	30, 000	.001000	.000200	0.	....	
17, 500	85, 000	.001200	.000200	0.	....	
20, 000	40, 000	.001400	.000200	.000050	.000050	
20, 500	41, 000	.001450	.000050	....	....	
21, 000	42, 000	.001500	.000050	....	....	
21, 500	43, 000	.001500	0.	....	....	
22, 000	44, 000	.001550	.000050	....	....	
22, 500	45, 000	.001600	.000050	.000200	.000150	Elastic limit.
23, 000	46, 000	.001750	.000150	....	....	
23, 500	47, 000	.003000	.001250	....	....	
24, 000	48, 000	.007300	.004300	.006750	.006550	
24, 500	49, 000	.009600	.002300	.007800	.001050	
25, 000	50, 900	.010850	.001250	.009000	.001200	
44, 800	89, 600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section..........pounds.. 45, 000
Compression per inch under stress at elastic limit..........inch.. .001600
Ultimate strength per square inch of original section..........pounds.. 89, 600
Manner of failure..........triple flexure.

No. 2198.

Marks, $\overset{32\ T_2}{M.\ T_1}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000700	.000200	0.	....	
5,000	25,000	.000900	.000200	0.	....	
6,000	30,000	.001050	.000150	0.	....	
7.000	35,000	.001250	.000200	0.	....	
8,000	40,000	.001400	.000150	0.	....	
9,000	45,000	.001550	.000150	0.	....	
9,200	46,000	.001550	0.	....	....	
9,400	47,000	.001650	.000100	....	....	
9,600	48,000	.001700	.000050	....	....	Elastic limit.
9,800	49,000	.006500	.004800	....	....	
10,000	50,000	.007150	.000650	....	....	
10,200	51,000	.007900	.000750	....	....	
10,400	52,000	.008900	.001000	....	....	
10,600	53,000	.009900	.001000	....	....	
10,800	54,000	.011000	.001100	....	....	
11,000	55,000	.011900	.000900	....	....	
11,200	56,000	.012900	.001000	....	....	
11,400	57,000	.013900	.001600	....	....	
11,600	58,000	.015000	.001100	....	....	
11,800	59,000	.016000	.001000	....	....	
12,000	60,000	.016800	.000800	....	....	
12,400	62,000	.019800	.003000	....	....	
12,800	64,000	.022750	.002950	....	....	
13,200	66,000	.025100	.002350	....	....	
13,600	68,000	.028200	.003100	....	....	
14,000	70,000	.031750	.003550	....	....	
14,400	72,000	.035750	.004000	....	....	
14,800	74,000	.040600	.004850	....	....	
15,200	76,000	.045650	.005050	....	....	
15,600	78,000	.052250	.006600	....	....	
16,000	80,000	.0600	.007750	....	....	
16,400	82,000	.0750	.0150	....	....	
16,800	84,000	.0950	.0200	....	....	
17,070	85,350	.1500	.0550	....	....	Tensile strength.

General summary.

Tensile strength	pounds..	85,350
Elastic limit per square inch of original section	do....	48,000
Elongation per inch after rupture	inch..	.2400
Elongation per inch under strain at elastic limit	do...	.001700
Reduction of diameter at point of rupture	do...	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		".90 from neck
Character of broken surface		silky, trace of granulation
Elongation of inch sections		".14, ".34*

No. 2199.

Marks, $\genfrac{}{}{0pt}{}{32\ T_2}{M\ T_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000250	.000100	0.	....	
3, 000	15, 000	.000450	.000200	0.	....	
4, 000	20, 000	.000550	.000100	0.	....	
5, 000	25, 000	.000700	.000150	0.	....	
6, 000	30, 000	.000900	.000200	0.	....	
7, 000	35, 000	.001100	.000200	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001500	.000250	0.	....	
9, 200	46, 000	.001550	.000050	....	....	
9, 400	47, 000	.001600	.000050	....	....	
9, 600	48, 000	.001700	.000100	....	....	Elastic limit.
9, 800	49, 000	.002700	.001000	....	....	
10, 000	50, 000	.004300	.001600	....	....	
10, 200	51, 000	.005850	.001550	....	....	
10, 400	52, 000	.007550	.001700	....	....	
10, 600	53, 000	.008500	.000950	....	....	
10, 800	54, 000	.009500	.001000	....	....	
11, 000	55, 000	.010500	.001000	....	....	
11, 200	56, 000	.011500	.001000	....	....	
11, 400	57, 000	.012300	.000800	....	....	
11, 600	58, 000	.013300	.001000	....	....	
11, 800	59, 000	.014900	.001600	....	....	
12, 000	60, 000	.016000	.001100	....	....	
12, 400	62, 000	.018600	.002600	....	....	
12, 800	64, 000	.021000	.002400	....	....	
13, 200	66, 000	.024000	.003000	....	....	
13, 600	68, 000	.026500	.002500	....	....	
14, 000	70, 000	.029700	.003200	....	....	
14, 400	72, 000	.033000	.003300	....	....	
14, 800	74, 000	.037500	.004500	....	....	
15, 200	76, 000	.041750	.004250	....	....	
15, 600	78, 000	.047850	.006100	....	....	
16, 000	80, 000	.052500	.004650	....	....	
16, 400	82, 000	.0600	.0075	....	....	
16, 800	84, 000	.0800	.0200	....	....	
17, 200	86, 000	.1100	.0300	....	....	
17, 320	86, 600	.1450	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	86, 600
Elastic limit per square inch of original section	do....	48, 000
Elongation per inch after rupture	inch..	.2500
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		″.40 from neck
Character of broken surface		silky
Elongation of inch sections		″ 33, ″.17

No. 1651.

Marks, $^{32\ T_3}_{B\ T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000900	.000150	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001200	.000150	0.	....	
9, 000	45, 000	.001350	.000150	0.	....	
10, 000	50, 000	.001500	.000150	0.	....	
10, 200	51, 000	.001550	.000050	....	....	
10, 400	52, 000	.001600	.000050	....	....	
10, 600	53, 000	.001650	.000050	....	....	
10, 800	54, 000	.001650	0.	....	....	
11, 000	55, 000	.001700	.000050	0.	....	
11, 200	56, 000	.001700	0.	....	....	
11, 400	57, 000	.001750	.000050	....	....	
11, 600	58, 000	.001800	.000050	....	....	Elastic limit.
11, 800	59, 000	.002500	.000700	....	....	
12, 000	60, 000	.003050	.000550	.001550	.001550	
12, 400	62, 000	.006000	.002950	....	....	
12, 800	64, 000	.008600	.002600	....	....	
13, 200	66, 000	.011000	.002400	....	....	
13, 600	68, 000	.013150	.002150	....	....	
14, 000	70, 000	.015500	.002350	....	....	
14, 400	72, 000	.017500	.002000	....	....	
14, 800	74, 000	.020000	.002500	....	....	
15, 200	76, 000	.022550	.002550	....	....	
15, 600	78, 000	.025500	.002950	....	....	
16, 000	80, 000	.028500	.003000	....	....	
16, 400	82, 000	.032250	.003750	....	....	
16, 800	84, 000	.035750	.003500	....	....	
17, 200	86, 000	.040500	.004750	....	....	
17, 600	88, 000	.046000	.005500	....	....	
18, 000	90, 000	.053500	.007500	....	....	
18, 400	92, 000	.063500	.010000	....	....	
18, 800	94, 000	.0900	.0265	....	....	
19, 020	95, 100	.1300	.040	....	....	Tensile strength.

General summary.

Specific gravity	7.8705
Tensile strength per square inch of original section ....pounds..	95, 100
Elastic limit per square inch of original section ....do....	58, 000
Elongation per inch after rupture ....inch..	.2350
Elongation per inch under strain at elastic limit ....do....	.001800
Reduction in diameter at point of rupture ....do....	.145
Reduction in area after rupture, per centum of original section	49.1
Position of rupture	″.85 from neck
Character of broken surface	silky, traces of granulation
Elongation of inch sections	″.32*, ″.15

No. 1652.

Marks, $\overset{32\ T_3}{B\ T_3}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000500	.000150	0.	....	
5,000	25,000	.000650	.000150	0.	....	
6,000	30,000	.000800	.000150	0.	....	
7,000	35,000	.000950	.900150	0.	....	
8,000	40,000	.001100	.000150	0.	....	
9,000	45,000	.001300	.000200	0.	....	
10,000	50,000	.001450	.000150	0.	....	
10,200	51,000	.001500	.000050	....	....	
10,400	52,000	.001550	.000050	....	....	
10,600	53,000	.001600	.000050	....	....	
10,800	54,000	.001650	.000050	....	....	Elastic limit.
11,000	55,000	.001950	.000300	.000250	.000250	
11,200	56,000	.002400	.000450	....	....	
11,400	57,000	.003600	.001200	....	....	
11,600	58,000	.004650	.001050	....	....	
11,800	59,000	.005700	.001050	....	....	
12,000	60,000	.006700	.001000	.004400	.004150	
12,400	62,000	.008250	.001550	....	....	
12,800	64,000	.010600	.002350	....	....	
13,200	66,000	.013100	.002500	....	....	
13,600	68,000	.015600	.002500	....	....	
14,000	70,000	.017600	.002000	....	....	
14,400	72,000	.020000	.002400	....	....	
14,800	74,000	.023050	.003050	....	....	
15,200	76,000	.025500	.002450	....	....	
15,600	78,000	.028750	.003250	....	....	
16,000	80,000	.032250	.003500	....	....	
16,400	82,000	.036050	.003800	....	....	
16,800	84,000	.040600	.004550	....	....	
17,200	86,000	.046750	.006150	....	....	
17,600	88,000	.054750	.008000	....	....	
18,000	90,000	.063500	.008750	....	....	
18,400	92,000	.082000	.018500	....	....	
18,550	92,750	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	92,750
Elastic limit per square inch of original section	do...	54,000
Elongation per inch after rupture	inch..	.2300
Elongation per inch under strain at elastic limit	do...	.001650
Reduction in diameter at point of rupture	do...	.145
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		″.15 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.28*, ″.18

No. 567.

Marks, $^{32\,T_3}_{B\,T_3}$
Length, 3''.991.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000450	.000200	0.	....	
10,000	20,000	.000350	.000100	0.	....	
12,500	25,000	.000700	.000150	0.	....	
15,000	30,000	.000900	.000200	0.	....	
17,500	35,000	.001050	.000150	.000050	.000050	
20,000	40,000	.001200	.000150	.000050	0.	
22,500	45,000	.001350	.000150	.000050	0.	
25,000	50,000	.001500	.000150	.000050	0.	
25,500	51,000	.001500	0.	....	....	
26,000	52,000	.001550	.000050	....	....	
26,500	53,000	.001550	0.	....	....	
27,000	54,000	.001600	.000050	....	....	
27,500	55,000	.001650	.000050	.000100	.000050	
28,000	56,000	.001650	0.	....	....	
28,500	57,000	.001700	.000050	....	....	
29,000	58,000	.001750	.000050	....	....	Elastic limit.
29,500	59,000	.002050	.000300	....	....	
30,000	60,000	.002650	.000600	.000750	.000650	
30,500	61,000	.003250	.000600	....	....	
31,000	62,000	.004250	.001000	....	....	
31,500	63,000	.005150	.000900	....	....	
32,000	64,000	.006050	.000900	....	....	
32,500	65,000	.006950	.000900	.004650	.003900	
49,500	99,000	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section .... pounds.. 58,000
Compression per inch under stress at elastic limit .... inch.. 0.001750
Ultimate strength per square inch of original section .... pounds.. 99,900
Manner of failure .... triple flexure

No. 1652.

Marks, $^{32\,T_1}_{B\,T_2}$
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.		
2, 000	10, 000	.000200	.000100	0.		
3, 000	15, 000	.000350	.000150	0.		
4, 000	20, 000	.000500	.000150	0.		
5, 000	25, 000	.000650	.000150	0.		
6, 000	30, 000	.000800	.000150	0.		
7, 000	35, 000	.000950	.900150	0.		
8, 000	40, 000	.001100	.000150	0.		
9, 000	45, 000	.001300	.000200	0.		
10, 000	50, 000	.001450	.000150	0.		
10, 200	51, 000	.001500	.000050			
10, 400	52, 000	.001550	.000050			
10, 600	53, 000	.001600	.000050			
10, 800	54, 000	.001650	.000050			Elastic limit.
11, 000	55, 000	.001950	.000300	.000250	.000250	
11, 200	56, 000	.002400	.000450			
11, 400	57, 000	.003600	.001200			
11, 600	58, 000	.004650	.001050			
11, 800	59, 000	.005700	.001050			
12, 000	60, 000	.006700	.001000	.004400	.004150	
12, 400	62, 000	.008250	.001550			
12, 800	64, 000	.010600	.002350			
13, 200	66, 000	.013100	.002500			
13, 600	68, 000	.015600	.002500			
14, 000	70, 000	.017600	.002000			
14, 400	72, 000	.020000	.002400			
14, 800	74, 000	.023050	.003050			
15, 200	76, 000	.025500	.002450			
15, 600	78, 000	.028750	.003250			
16, 000	80, 000	.032250	.003500			
16, 400	82, 000	.036050	.003800			
16, 800	84, 000	.040600	.004550			
17, 200	86, 000	.046750	.006150			
17, 600	88, 000	.054750	.008000			
18, 000	90, 000	.063500	.008750			
18, 400	92, 000	.082000	.018500			
18, 550	92, 750					Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	92, 750
Elastic limit per square inch of original section	do...	54, 000
Elongation per inch after rupture	inch..	.2300
Elongation per inch under strain at elastic limit	do...	.001650
Reduction in diameter at point of rupture	do...	.145
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		''.15 from middle of stem
Character of broken surface		silky
Elongation of inch sections		''.28*, ''.18

No. 567.

Marks, $^{32\ T_3}_{B\ T_2}$
Length, 3″.991.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15, 000	.000450	.000200	0.	....	
10, 000	20, 000	.000550	.000100	0.	....	
12, 500	25, 000	.000700	.000150	0.	....	
15, 000	30, 000	.000900	.000200	0.	....	
17, 500	35, 000	.001050	.000150	.000050	.000050	
20, 000	40, 000	.001200	.000150	.000050	0.	
22, 500	45, 000	.001350	.000150	.000050	0.	
25, 000	50, 000	.001500	.000150	.000050	0.	
25, 500	51, 000	.001500	0.	....	....	
26, 000	52, 000	.001550	.000050	....	....	
26, 500	53, 000	.001550	0.	....	....	
27, 000	54, 000	.001600	.000050	....	....	
27, 500	55, 000	.001650	.000050	.000100	.000050	
28, 000	56, 000	.001650	0.	....	....	
28, 500	57, 000	.001700	.000050	....	....	
29, 000	58, 000	.001750	.000050	....	....	Elastic limit.
29, 500	59, 000	.002050	.000300	....	....	
30, 000	60, 000	.002650	.000600	.000750	.000650	
30, 500	61, 000	.003250	.000600	....	....	
31, 000	62, 000	.004250	.001000	....	....	
31, 500	63, 000	.005150	.000900	....	....	
32, 000	64, 000	.006050	.000900	....	....	
32, 500	65, 000	.006950	.000900	.004650	.003900	
49, 500	99, 000	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	58, 000
Compression per inch under stress at elastic limit	inch..	0. 001750
Ultimate strength per square inch of original section	pounds..	99, 900
Manner of failure		triple flexure

No. 1653.

Marks, $^{32\ T_3}_{M\ T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000900	.000150	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001200	.000150	0.	....	
9, 000	45, 000	.001350	.000150	0.	....	
10, 000	50, 000	.001550	.000200	0.	....	
10, 200	51, 000	.001600	.000050	....	....	
10, 400	52, 000	.001650	.000050	....	....	
10, 600	53, 000	.001700	.000050	....	....	
10, 800	54, 000	.001750	.000050	....	....	Elastic limit.
11, 000	55, 000	.002050	.000300	.000250	, .000250	
11, 200	56, 000	.002550	.000500	....	....	
11. 400	57, 000	.002950	.000400	....	....	
11, 600	58, 000	.003750	.000800	....	....	
11, 800	59. 000	.005150	.001400	....	....	
12, 000	60, 000	.006450	.001300	.004300	.004050	
12, 400	62, 000	.008700	.002250	....	....	
12, 800	64, 000	.010600	.001900	....	....	
13, 200	66, 000	.012900	.002300	....	....	
13, 600	68, 000	.015250	.002350	....	....	
14, 000	70, 000	.017750	.002500	....	....	
14, 400	72, 000	.020350	.002600	....	....	
14, 800	74, 000	.023250	.002900	....	....	
15, 200	76, 000	.026250	.003000	....	....	
15, 600	78, 000	.029000	.002750	....	....	
16, 000	80, 000	.032650	.003650	....	....	
16, 400	82, 000	.037000	.004350	....	....	
16, 800	84, 000	.041750	.004750	....	....	
17, 200	86, 000	.047000	.005250	....	....	
17, 600	88, 000	.054500	.007500	....	....	
18, 000	90, 000	.066500	.012000	....	....	
18, 400	92, 000	.083500	.017000	....	....	
18, 580	92, 900	.1150	.0315	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	92, 900
Elastic limit per square inch of original section ....do....	54, 000
Elongation per inch after rupture ....inch..	0. 1200
Elongation per inch under strain at elastic limit..do ...	.001750
Reduction in diameter at point of rupture...... ....do....	.035
Reduction in area after rupture, per centum of original section..................................	13. 2
Position of rupture..	″.20 from neck
Character of broken surface	granular; contains flaky spot
Elongation of inch sections	″.15*, ″.09

No. 1654.

Marks, $\genfrac{}{}{0pt}{}{32\ T_3}{M\ T_7}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	.0	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000350	.000100	0.	....	
4, 000	20, 000	.000500	.000150	0.	....	
5, 000	25, 000	.000700	.000200	0.	....	
6, 000	30, 000	.000850	.000150	0.	....	
7, 000	35, 000	.001050	.000200	0.	....	
8, 000	40, 000	.001250	.000200	0.	....	
9, 000	45, 000	.001350	.000100	0.	....	
10, 000	50, 000	.001500	.000150	.000050	.000050	
10, 200	51, 000	.001550	.000050	....	....	
10, 400	52, 000	.001600	.000050	....	....	
10, 600	53, 000	.001650	.000050	....	....	
10, 800	54, 000	.001750	.000100	....	....	Elastic limit.
11, 000	55, 000	.002250	.000500	.000400	.000350	
11, 200	56, 000	.002750	.000500	....	....	
11, 400	57, 000	.003400	.000650	....	....	
11, 600	58, 000	.004450	.001050	....	....	
11, 800	59, 000	.006000	.001550	....	....	
12, 000	60, 000	.007250	.001250	.004950	.004550	
12, 400	62, 000	.009150	.001900	....	....	
12, 800	64, 000	.010850	.001700	....	....	
13, 200	66, 000	.013150	.002300	....	....	
13, 600	68, 000	.015600	.002450	....	....	
14, 000	70, 000	.018050	.002450	....	....	
14, 400	72, 000	.020450	.002400	....	....	
14, 800	74, 000	.022850	.002400	....	....	
15, 200	76, 000	.025450	.002600	....	....	
15, 600	78, 000	.028600	.003150	....	....	
16, 000	80, 000	.032000	.003400	....	....	
16, 400	82, 000	.036100	.004100	....	....	
16, 800	84, 000	.040600	.004500	....	....	
17, 200	86, 000	.046550	.005950	....	....	
17, 600	88, 000	.053700	.007150	....	....	
18, 000	90, 000	.064250	.010550	....	....	
18, 400	92, 000	.0850	.020750	....	....	
18, 680	93, 400	.1150	.0300	....	....	Tensile strength.

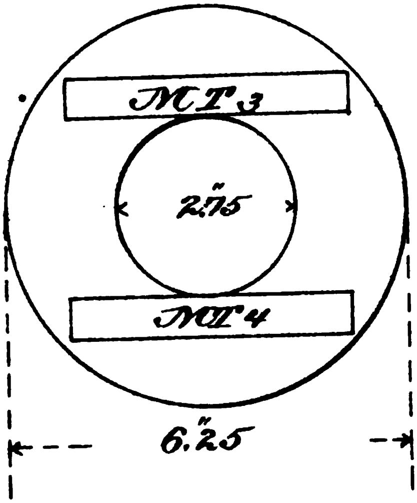
General summary.

Tensile strength per square inch of original section	**pounds**	**93, 400**
Elastic limit per square inch of original section	**do**	**54, 000**
Elongation per inch after rupture	**inch**	**0. 1950**
Elongation per inch under strain at elastic limit	**do**	**.001750**
Reduction in diameter at point of rupture	**do**	**.124**
Reduction in area after rupture, per centum of original section	**do**	**43. 3**
Position of rupture		**½ inch from neck**
Character of broken surface		**granular, 50 per centum ; silky, 50 per centum**
Elongation of inch sections		**″.29* ″.10**

Tube No. 3   3.2" Rifle

Additional specimens

Muzzle end



No. 2238.

Marks, $\frac{32\ T_2}{M\ T_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000700	.000250	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.001000	.000150	0.	....	
7,000	35,000	.001150	.000150	0.	....	
8,000	40,000	.001300	.000150	0.	....	
9,000	45,000	.001500	.000200	0.	....	
9,200	46,000	.001500	0.	....	....	
9,400	47,000	.001550	.000050	....	....	
9,600	48,000	.001600	.000050	....	....	
9,800	49,000	.001650	.000050	....	....	Elastic limit.
10,000	50,000	.009950	.008300	....	....	
10,200	51,000	.010700	.000750	....	....	
10,400	52,000	.011450	.000750	....	....	
10,600	53,000	.013000	.001550	....	....	
10,800	54,000	.014150	.001150	....	....	
11,000	55,000	.015350	.001200	....	....	
11,200	56,000	.017000	.001650	....	....	
11,400	57,000	.017900	.000900	....	....	
11,600	58,000	.019150	.001250	....	....	
11,800	59,000	.020800	.001650	....	....	
12,000	60,000	.022250	.001450	....	....	
12 400	62,000	.025150	.002900	....	....	
12,800	64,000	.028500	.003350	....	....	
13,200	66,000	.032650	.004150	....	....	
13,600	68,000	.036200	.003550	....	....	
14,000	70,000	.042000	.005800	....	....	
14,400	72,000	.049000	.007000	....	....	
14,800	74,000	.056000	.007000	....	....	
15,200	76,000	.065600	.009600	....	....	
15,600	78,000	.0850	.0194	....	....	
16,000	80,000	.1050	.0200	....	....	
16,140	80,700	.1600	.0550	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80,700
Elastic limit per square inch of original section	do....	49,000
Elongation per inch after rupture	inch..	0.2850
Elongation per inch under strain at elastic limit	do....	.001650
Reduction in diameter at point of rupture	do....	.155
Reduction in area after rupture, per centum of original section		51.9
Position of rupture		⅞-inch from neck
Character of broken surface		silky
Elongation of inch sections		″.37*, ″.10

No. 2239.

Marks, $^{32\ T_3}_{M\ T_4}$
Diameter, ″.505.
Sectional area, .20 square inch.

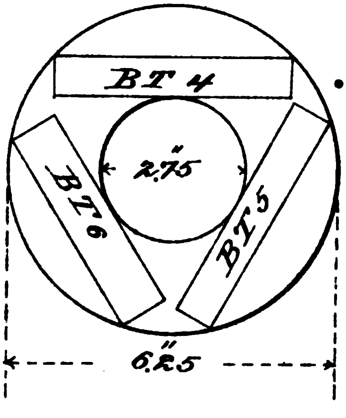
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000350	.000200	0.	....	
3, 000	15, 000	.000550	.000200	0.	....	
4, 000	20, 000	.000800	.000250	0.	....	
5, 000	25, 000	.000950	.000150	0.	....	
6, 000	30, 000	.001150	.000200	0.	....	
7, 000	35, 000	.001350	.000200	0.	....	
7, 600	38, 000	.001450	.000100	....	....	
7, 800	39, 000	.001550	.000100	....	....	Elastic limit.
8, 000	40, 000	.004650	.003100	.003300	.003300	
8, 200	41, 000	.010150	.005500	....	....	
8, 400	42, 000	.010650	.000500	....	....	
8, 600	43, 000	.011600	.000950	....	....	
8, 800	44, 000	.012550	.000950	....	....	
9, 000	45, 000	.013900	.001350	....	....	
9, 200	46, 000	.014750	.000850	....	....	
9, 400	47, 000	.016050	.001300	....	....	
9, 600	48, 000	.017000	.000950	....	....	
9, 800	49, 000	.017800	.000800	....	....	
10, 000	50, 000	.018750	.000950	....	....	
10, 200	51, 000	.021200	.002450	....	....	
10, 400	52, 000	.022800	.001600	....	....	
10, 600	53, 000	.023500	.000700	....	....	
10, 800	54, 000	.024750	.001250	....	....	
11, 000	55, 000	.026750	.002000	....	....	
11, 200	56, 000	.028750	.002000	....	....	
11, 400	57, 000	.030750	.002000	....	....	
11, 600	58, 000	.032500	.001750	....	....	
11, 800	59, 000	.035000	.002500	....	....	
12, 000	60, 000	.036500	.001500	....	....	
12, 400	62, 000	.042050	.005550	....	....	
12, 800	64, 000	.047500	.005450	....	....	
13, 200	66, 000	.055500	.008000	....	....	
13, 600	68, 000	.063250	.007750	....	....	
14, 000	70, 000	.0750	.011750	....	....	
14, 400	72, 000	.1000	.0250	....	....	
14, 800	74, 000	.1400	.0400	....	....	
14, 910	74, 550	.1900	.0500	....	....	Tensile strength.

General summary.

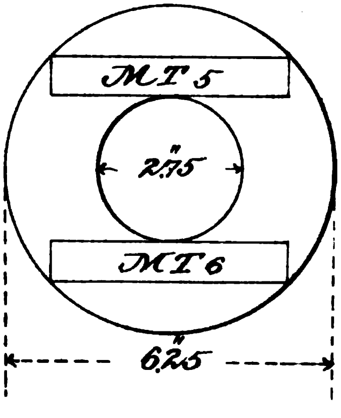
Tensile strength per square inch of original section	pounds..	74, 550
Elastic limit per square inch of original section	do....	39, 000
Elongation per inch after rupture	inch..	0. 2850
Elongation per inch under strain at elastic limit	do....	.001550
Reduction in diameter at point of rupture	do....	.145
Reduction in area after rupture, per centum of original section		49. 1
Position of rupture		⅜ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.40,* ″.17

New Tube No. 3 3.2" Rifle

Breech end



Muzzle end



No. 2700.

Marks, $^{32}_{B}{}^{T_3}_{T_4}$
Diameter, ″.506.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000450	.000200	0.	....	
4, 000	20, 000	.000550	.000100	0.	....	
5, 000	25, 000	.000650	.000100	.000050	.000050	
6, 000	30, 000	.000850	.000200	.000050	0.	
7, 000	35, 000	.001050	.000200	....	....	
8, 000	40, 000	.001150	.000100	....	....	
9, 000	45, 000	.001300	.000150	....	....	
10, 000	50, 000	.001550	.000250	....	....	
10, 200	51, 000	.001600	.000050	....	....	
10, 400	52, 000	.001650	.000050	....	....	Elastic limit.
10, 600	53, 000	.002250	.000600	....	....	
10, 800	54, 000	.002900	.000650	....	....	
11, 000	55, 000	.004250	.001350	....	....	
11, 200	56, 000	.005250	.001000	....	....	
11, 400	57, 000	.006250	.001000	....	....	
11, 600	58, 000	.007250	.001000	....	....	
11, 800	59, 000	.008150	.000900	....	....	
12, 000	60, 000	.009100	.000950	....	....	
12, 400	62, 000	.011250	.002150	....	....	
12, 800	64, 000	.013000	.001750	....	....	
13, 200	66, 000	.015250	.002250	....	....	
13, 600	68, 000	.017500	.002250	....	....	
14, 000	70, 000	.019650	.002150	....	....	
14, 400	72, 000	.022250	.002600	....	....	
14, 800	74, 000	.025000	.002750	....	....	
15, 200	76, 000	.027500	.002500	....	....	
15, 600	78, 000	.030150	.002650	....	....	
16, 000	80, 000	.034250	.004100	....	....	
16, 400	82, 000	.038000	.003750	....	....	
16, 800	84, 000	.042500	.004500	....	....	
17, 200	86, 000	.050000	.007500	....	....	
17, 600	88, 000	.0600	.0100	....	....	
18, 000	90, 000	.0650	.0050	....	....	
18, 400	92, 000	.0750	.0100	....	....	
18, 750	93, 750	.1350	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	93, 750
Elastic limit per square inch of original section	do....	52, 000
Elongation per inch after rupture	inch..	.02350
Elongation per inch under strain at elastic limit	do....	.001650
Reduction in diameter at point of rupture	do....	.136
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		″.45 from middle
Character of broken surface		silky
Elongation of inch sections		″.13, ″.34*

No. 2701.

Marks, $\genfrac{}{}{0pt}{}{32\ T_{8}}{B\ T_{5}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001250	.000150	0.	....	
9,000	45,000	.001400	.000150	....	....	
10,000	50,000	.001550	.000150	....	....	
10,200	51,000	.001600	.000050	....	....	
10,400	52,000	.001650	.000050	....	....	
10,600	53,000	.001700	.000050	....	....	
10,800	54,000	.001750	.000050	....	....	Elastic limit.
11,000	55,000	.002500	.000750	....	....	
11,200	56,000	.003100	.000600	....	....	
11,400	57,000	.004000	.000900	....	....	
11,600	58,000	.005000	.001000	....	....	
11,800	59,000	.006000	.001000	....	....	
12,000	60,000	.007000	.001000	....	....	
12,400	62,000	.008750	.001750	....	....	
12,800	64,000	.010500	.001750	....	....	
13,200	66,000	.012500	.002000	....	....	
13,600	68,000	.013750	.001250	....	....	
14,000	70,000	.015500	.001750	....	....	
14,400	72,000	.017750	.002250	....	....	
14,800	74,000	.020000	.002250	....	....	
15,200	76,000	.022500	.002500	....	....	
15,600	78,000	.025250	.002750	....	....	
16,000	80,000	.028000	.002750	....	....	
16,400	82,000	.030500	.002500	....	....	
16,800	84,000	.934500	.004000	....	....	
17,200	86,000	.038000	.003500	....	....	
17,600	88,000	.042000	.004000	....	....	
18,000	90,000	.046500	.004500	....	....	
18,400	92,000	.0550	.0085	....	....	
18,800	94,000	.0600	.0050	....	....	
19,200	96,000	.0750	.0150	....	....	
19,490	97,450	.1150	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	97,450
Elastic limit per square inch of original section	do....	54,000
Elongation per inch after rupture	inch..	0.1800
Elongation per inch under strain at elastic limit	do....	.001750
Reduction in diameter at point of rupture	do....	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		½ inch from neck
Character of broken surface		granular, dull flaky center
Elongation of inch sections		″.11, ″.25*

No. 670.

Marks, $\frac{32\ T_3}{B\ T_6}$
Length, 4''.003.
Diameter, ''.785.
Sectional area, .484 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
484	1, 000	0.	0.	0.	0.	Initial load.
2, 420	5, 000	.000167	.000167	0.	....	
4, 840	10, 000	.000333	.000166	0.	....	
7, 260	15, 000	.000500	.000167	0.	....	
9, 680	20, 000	.000667	.000167	0.	....	
12, 100	25, 000	.000833	.000166	0.	....	
14, 520	30, 000	.001000	.000167	0.	....	
16, 940	35, 000	.001167	.000167	0.	....	
19, 360	40, 000	.001367	.000200	0.	....	
19, 844	41, 000	.001367	0.	....	....	
20, 328	42, 000	.001400	.000033	....	....	
20, 812	43, 000	.001433	.000033	....	....	
21, 296	44, 000	.001500	.000067	....	....	
21, 780	45, 000	.001533	.000033	....	....	
22, 264	46, 000	.001567	.000034	....	....	
22, 748	47, 000	.001600	.000033	....	....	Elastic limit.
23, 232	48, 000	.001767	.000167	....	....	
23, 716	49, 000	.002500	.000733	....	....	
24, 200	50, 000	.003067	.000567	....	....	
24, 684	51, 000	.003900	.000833	....	....	
25, 168	52, 000	.004933	.001033	....	....	
48, 100	99, 380	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	47, 000
Compression per inch under stress at elastic limit	inch..	0.001600
Ultimate strength per square inch of original section	pounds..	99, 380
Manner of failure		triple flexure

No. 2701.

Marks, $\frac{32\ T_{3}}{B\ T_{5}}$.
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000300	.000200	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000800	.000200	0.	....	
6, 000	30, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001100	.000150	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001400	.000150	....	....	
10, 000	50, 000	.001550	.000150	....	....	
10, 200	51, 000	.001600	.000050	....	....	
10, 400	52, 000	.001650	.000050	....	....	
10, 600	53, 000	.001700	.000050	....	....	
10, 800	54, 000	.001750	.000050	....	....	Elastic limit.
11, 000	55, 000	.002500	.000750	....	....	
11, 200	56, 000	.003100	.000600	....	....	
11, 400	57, 000	.004000	.000900	....	....	
11, 600	58, 000	.005000	.001000	....	....	
11, 800	59, 000	.006000	.001000	....	....	
12, 000	60, 000	.007000	.001000	....	....	
12, 400	62, 000	.008750	.001750	....	....	
12, 800	64, 000	.010500	.001750	....	....	
13, 200	66, 000	.012500	.002000	....	....	
13, 600	68, 000	.013750	.001250	....	....	
14, 000	70, 000	.015500	.001750	....	....	
14, 400	72, 000	.017750	.002250	....	....	
14, 800	74, 000	.020000	.002250	....	....	
15, 300	76, 000	.022500	.002500	....	....	
15, 600	78, 000	.025250	.002750	....	....	
16, 000	80, 000	.028000	.002750	....	....	
16, 400	82, 000	.030500	.002500	....	....	
16, 800	84, 000	.934500	.004000	....	....	
17, 200	86, 000	.038000	.003500	....	....	
17, 600	88, 000	.042000	.004000	....	....	
18, 000	90, 000	.046500	.004500	....	....	
18, 400	92, 000	.0550	.0085	....	....	
18, 800	94, 000	.0600	.0050	....	....	
19, 200	96, 000	.0750	.0150	....	....	
19, 490	97, 450	.1150	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	97, 450
Elastic limit per square inch of original section............do....	54, 000
Elongation per inch after rupture............inch..	0. 1800
Elongation per inch under strain at elastic limit............do....	.001750
Reduction in diameter at point of rupture............do....	.095
Reduction in area after rupture, per centum of original section	34. 0
Position of rupture............	¾ inch from neck
Character of broken surface............	granular, dull flaky center
Elongation of inch sections............	″.11, ″.25*

No. 670.

Marks, $\frac{32\ T_3}{B\ T_6}$
Length, 4''.003.
Diameter, ''.785.
Sectional area, .484 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
484	1,000	0.	0.	0.	0.	Initial load.
2,420	5,000	.000167	.000167	0.	....	
4,840	10,000	.000333	.000166	0.	....	
7,260	15,000	.000500	.000167	0.	....	
9,680	20,000	.000667	.000167	0.	....	
12,100	25,000	.000833	.000166	0.	....	
14,520	30,000	.001000	.000167	0.	....	
16,940	35,000	.001167	.000167	0.	....	
19,360	40,000	.001367	.000200	0.	....	
19,844	41,000	.001367	0.	....	....	
20,328	42,000	.001400	.000033	....	....	
20,812	43,000	.001433	.000033	....	....	
21,296	44,000	.001500	.000067	....	....	
21,780	45,000	.001533	.000033	....	....	
22,264	46,000	.001567	.000034	....	....	
22,748	47,000	.001600	.000033	....	....	Elastic limit.
23,232	48,000	.001767	.000167	....	....	
23,716	49,000	.002500	.000733	....	....	
24,200	50,000	.003067	.000567	....	....	
24,684	51,000	.003900	.000833	....	....	
25,168	52,000	.004933	.001033	....	....	
48,100	99,380	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	47,000
Compression per inch under stress at elastic limit	inch..	0.001600
Ultimate strength per square inch of original section	pounds..	99,380
Manner of failure		triple flexure

No. 2702.

Marks, $\begin{smallmatrix}82\ T_3\\ M\ T_5\end{smallmatrix}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000400	.000300	0.	....	
3, 000	15, 000	.000500	.000100	0.	....	
4, 000	20, 000	.000650	.000150	0.	....	
5, 000	25, 000	.000900	.000250	0.	....	
6, 000	30, 000	.001000	.000100	0.	....	
7, 000	35, 000	.001250	.000250	0.	....	
8, 000	40, 000	.001450	.000200	0.	....	
9, 000	45, 000	.001600	.000150	....	....	
10, 000	50, 000	.001800	.000200	....	....	
10, 200	51, 000	.001850	.000050	....	....	
10, 400	52, 000	.001900	.000050	....	....	
10, 600	53, 000	.001950	.000050	....	....	
10, 800	54, 000	.002000	.000050	....	....	
11, 000	55, 000	.002000	0.	....	....	
11, 200	56, 000	.002100	.000100	....	....	Elastic limit.
11, 400	57, 000	.002250	.000150	....	....	
11, 600	58, 000	.002500	.000250	....	....	
11, 800	59, 000	.002700	.000200	....	....	
12, 000	60, 000	.003100	.000400	....	....	
12, 400	62, 000	.004250	.001150	....	....	
12, 800	64, 000	.007000	.002750	....	....	
13, 200	66, 000	.008750	.001750	....	....	
13, 600	68, 000	.010600	.001850	....	....	
14, 000	70, 000	.012500	.001900	....	....	
14, 400	72, 000	.015150	.002650	....	....	
14, 800	74, 000	.017250	.002100	....	....	
15, 200	76, 000	.019250	.002000	....	....	
15, 600	78, 000	.022000	.002750	....	....	
16, 000	80, 000	.024500	.002500	....	....	
16, 400	82, 000	.027500	.003000	....	....	
16, 800	84, 000	.030400	.002900	....	....	
17, 200	86, 000	.034500	.004100	....	....	
17, 600	88, 000	.038750	.004250	....	....	
18, 000	90, 000	.043000	.004250	....	....	
18, 400	92, 000	.049000	.006000	....	....	
18, 800	94, 000	.0550	.0060	....	....	
19, 200	96, 000	.0650	.0100	....	....	
19, 600	98, 000	.0800	.0150	....	....	
19, 820	99, 100	.1300	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	99, 100
Elastic limits per square inch of original section	do....	56, 000
Elongation per inch after rupture	inch..	0. 2200
Elongation per inch under strain of elastic limit	do....	.002100
Reduction in diameter at point of rupture	do....	.115
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		″.35 from middle of stem
Character of broken surface		granular, 20 per centum; silky, 80 per centum
Elongation of inch sections		″.14, ″.30*

No. 2703.

Marks, $\frac{32\ T_3}{M\ T_4}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square. inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	11, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000250	.000100	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000550	.000150	0.	....	
5, 000	25, 000	.000700	.000150	0.	....	
6, 000	30, 000	.000850	.000150	0.	....	
7, 000	35, 000	.001050	.000200	....	....	
8, 000	40, 000	.001200	.000150	....	....	
9, 000	45, 000	.001350	.000150	....	....	
10, 000	50, 000	.001500	.000150	....	....	
10, 200	51, 000	.001550	.000050	....	....	
10, 400	52, 000	.001550	0.	....	....	
10, 600	53, 000	.001600	.000050	....	....	
10, 800	54, 000	.001650	.000050	....	....	
11, 000	55, 000	.001700	.000050	....	....	
11, 200	56, 000	.001750	.000050	....	....	Elastic limit.
11, 400	57, 000	.002050	.000300	....	....	
11, 600	58, 000	.002500	.000450	....	....	
11, 800	59, 000	.003300	.000800	....	....	
12, 000	60, 000	.003700	.000400	....	....	
12, 400	62, 000	.005250	.001550	....	....	
12, 800	64, 000	.007350	.002100	....	....	
13, 200	66, 000	.009350	.002000	....	....	
13, 600	68, 000	.011000	.001650	....	....	
14, 000	70, 000	.012750	.001750	....	....	
14, 400	72, 000	.014850	.002100	....	....	
14, 800	74, 000	.016550	.001700	....	....	
15, 200	76, 000	.018750	.002200	....	....	
15, 600	78, 000	.020850	.002100	....	....	
16, 000	80, 000	.023150	.002300	....	....	
16, 400	82, 000	.025950	.002800	....	....	
16, 800	84, 000	.028600	.002650	....	....	
17, 200	86, 000	.032000	.003400	....	....	
17, 600	88, 000	.035150	.003150	....	....	
18, 000	90, 000	.038750	.003600	....	....	
18, 400	92, 000	.043500	.004750	....	....	
18, 800	94, 000	.049250	.005750	....	....	
19, 200	96, 000	.0550	.005750	....	....	
19, 600	98, 000	.0600	.0050	....	....	
20, 000	100, 000	.0850	.0250	....	....	
20, 160	100, 800	.1100	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	100, 800
Elastic limit per square inch of original section	do....	56, 000
Elongation per inch after rupture	inch..	0. 1700
Elongation per inch under strain at elastic limit	do....	.001750
Reduction in diameter at point of rupture	do....	.095
Reduction in area after rupture, per centum of original section		34. 0
Position of rupture		″.45 from neck
Character of broken surface		granular, silky center
Elongation of inch sections		″.25′ ″.09

No. 1655.

Marks, $^{32\ T_4}_{B\ T_1}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000350	.000150	0.	....	
4, 000	20, 000	.000500	.000150	0.	....	
5, 000	25, 000	.000650	.000150	0.	....	
6, 000	30, 000	.000800	.000150	0.	....	
7, 000	35, 000	.001000	.000200	0.	....	
8, 000	40, 000	.001150	.000150	0.	....	
9, 000	45, 000	.001350	.000200	0.	....	
9, 200	46, 000	.001400	.000050	....	....	Elastic limit.
9, 400	47, 000	.002600	.001200	....	....	
9, 600	48, 000	.003200	.000800	....	....	
9, 800	49, 000	.005150	.001950	....	....	
10, 000	50, 000	.006350	.001200	.004500	.004500	
10, 200	51, 000	.007300	.000950	....	....	
10, 400	52, 000	.007800	.000500	....	....	
10, 600	53, 000	.008800	.001000	....	....	
10, 800	54, 000	.009800	.001000	....	....	
11, 000	55, 000	.010750	.000950	.008700	.004200	
11, 200	56, 000	.012000	.001250	....	....	
11, 400	57, 000	.012850	.000850	....	....	
11, 600	58, 000	.014150	.001300	....	....	
11, 800	59, 000	.015250	.001100	....	....	
12, 000	60, 000	.016250	.001000	.013950	.005250	
12, 400	62, 000	.019350	.003100	....	....	
12, 800	64, 000	.021700	.002350	....	....	
13, 200	66, 000	.024500	.002800	....	....	
13, 600	68, 000	.028000	.003500	....	....	
14, 000	70, 000	.031050	.003050	....	....	
14, 400	72, 000	.034750	.003700	....	....	
14, 800	74, 000	.039000	.004250	....	....	
15, 200	76, 000	.045000	.006000	....	....	
15, 600	78, 000	.050600	.005600	....	....	
16, 000	80, 000	.059500	.008900	....	....	
16, 400	82, 000	.073500	.014000	....	....	
16, 800	84, 000	.1000	.0265	....	....	
16, 980	84, 900	.1450	.0450	....	....	Tensile strength.

General summary.

Specific gravity		7.8724
Tensile strength per square inch of original section	pounds..	84, 900
Elastic limit per square inch of original section	do ...	46, 000
Elongation per inch after rupture	inch..	0.2500
Elongation per inch under strain at elastic limit	do....	.001400
Reduction in diameter at point of rupture	do....	.145
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		".70 from neck
Character of broken surface		silky
Elongation of inch sections		".37*, ".13

No. 1656.

Marks, $^{32\ T_4}_{B\ T_2}$
Diameter, ''.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000300	.000100	0.	....	
4,000	20,000	.000400	.000100	0.	....	
5,000	25,000	.000550	.000150	0.	....	
6,000	30,000	.000700	.000150	0.	....	
7,000	35,000	.000900	.000200	0.	....	
8,000	40,000	.001100	.000200	0.	....	
8,200	41,000	.001150	.000050	....	....	
8,400	42,000	.001150	0.	....	....	
8,600	43,000	.001200	.000050	....	....	
8,800	44,000	.001300	.000100	....	....	Elastic limit.
9,000	45,000	.004850	.003550	.003300	.003300	
9,200	46,000	.006500	.001650	....	....	
9,400	47,000	.007300	.000800	....	....	
9,600	48,000	.008400	.001100	....	....	
9,800	49,000	.009350	.000950	....	....	
10,000	50,000	.010600	.001250	.008800	.005500	
10,200	51,000	.011750	.001150	....	....	
10,400	52,000	.011600	.000850	....	....	
10,600	53,000	.013750	.001150	....	....	
10,800	54,000	.015000	.001250	....	....	
11,000	55,000	.016050	.001050	....	....	
11,200	56,000	.017450	.001400	....	....	
11,400	57,000	.019100	.001650	....	....	
11,600	58,000	.020100	.001000	....	....	
11,800	59,000	.021400	.001300	....	....	
12,000	60,000	.022900	.001500	....	....	
12,400	62,000	.025650	.002750	....	....	
12,800	64,000	.029000	.003350	....	....	
13,200	66,000	.033050	.004050	....	....	
13,600	68,000	.037000	.003950	....	....	
14,000	70,000	.042050	.005050	....	....	
14,400	72,000	.049000	.006950	....	....	
14,800	74,000	.056250	.007250	....	....	
15,200	76,000	.066500	.010250	....	....	
15,600	78,000	.084000	.017500	....	....	
16,000	80,000	.1100	.1260	....	....	
16,080	80,400	.1450	.1350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..............pounds..	80,400
Elastic limit per square inch of original section..............do....	44,000
Elongation per inch after rupture..............inch..	0.2050
Elongation per inch under strain at elastic limit..............do....	.001300
Reduction in diameter at point of rupture..............do....	.104
Reduction in area after rupture, per centum of original section..............	37.1
Position of rupture..............	½ inch from neck
Character of broken surface..............	granular, 50 per centum; silky, 50 per centum
Elongation of inch sections..............	''.30*, '.11

No. 568.

Marks, $\substack{32\ T_4 \\ B\ T_3}$
Length, 4″.004.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000550	.000150	0.	....	
12, 500	25, 000	.000700	.000150	0.	....	
15, 000	30, 000	.000850	.000150	0.	....	
17, 500	35, 000	.001050	.000200	0.	....	
20, 000	40, 000	.001400	.000350	.000150	.000150	Elastic limit.
20, 500	41, 000	.001550	.000150	....	....	
21, 000	42, 000	.001700	.000150	....	....	
21, 500	43, 000	.001950	.000250	....	....	
22, 000	44, 000	.002600	.000650	....	....	
22, 500	45, 000	.003700	.001100	.002050	.001900	
23, 000	46, 000	.006300	.002600	....	....	
23, 500	47, 000	.008600	.002300	....	....	
24, 000	48, 000	.009350	.000750	....	....	
24, 500	49, 000	.010650	.001300	....	....	
25, 000	50, 000	.011800	.001150	.009850	.007800	
44, 040	88, 080	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	40, 000
Compression per inch under stress at elastic limit	inch..	0. 001400
Ultimate strength per square inch of original section	pounds..	88, 080
Manner of failure		triple flexure

No. 1657.

Marks, $^{32\ T_4}_{M\ T_1}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000350	.000250	0.	....	
3, 000	15, 000	.000500	.000150	0.	....	
4, 000	20, 000	.000700	.000200	0.	....	
5, 000	25, 000	.000850	.000150	0.	....	
6, 000	30, 000	.001000	.000150	0.	....	
7, 000	35, 000	.001150	.000150	0.	....	
8, 000	40, 000	.001300	.000150	0.	....	
8, 200	41, 000	.001300	0.	....	....	
8, 400	42, 000	.001350	.000050	....	....	
8, 600	43, 000	.001350	0.	....	....	
8, 800	44, 000	.001400	.000050	....	....	
9, 000	45, 000	.001400	0.	0.	....	
9, 200	46, 000	.001450	.000050	....	....	
9, 400	47, 000	.001500	.000050	....	....	
9, 600	48, 000	.001550	.000050	....	....	
9, 800	49, 000	.001550	0.	....	....	
10, 000	50, 000	.001600	.000050	.000050	.000050	
10, 200	51, 000	.001650	.000050	....	....	
10, 400	52, 000	.001700	.000050	....	....	
10, 600	53, 000	.001750	.000050	....	....	Elastic limit.
10, 800	54, 000	.001950	.000200	....	....	
11, 000	55, 000	.002300	.000350	.000400	.000350	
11, 200	56, 000	.003450	.001150	....	....	
11, 400	57, 000	.004900	.001450	....	....	
11, 600	58, 000	.006450	.001550	....	....	
11, 800	59, 000	.007200	.000750	....	....	
12, 000	60, 000	.008300	.001100	.006000	.005600	
12, 400	62, 000	.010600	.002300	....	....	
12, 800	64, 000	.013000	.002400	....	....	
13, 200	66, 000	.015500	.002500	....	....	
13, 600	68, 000	.017500	.002000	....	....	
14, 000	70, 000	.020350	.002850	....	....	
14, 400	72, 000	.023000	.002650	....	....	
14, 800	74, 000	.026100	.003100	....	....	
15, 200	76, 000	.029400	.003300	....	....	
15, 600	78, 000	.033250	.003850	....	....	
16, 000	80, 000	.037500	.004250	....	....	
16, 400	82, 000	.043000	.005500	....	....	
16, 800	84, 000	.049000	.006000	....	....	
17, 200	86, 000	.057500	.008500	....	....	
17, 600	88, 000	.071250	.013750	....	....	
18, 000	90, 000	.0950	.023750	....	....	
18, 010	90, 050	.1150	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	90, 050
Elastic limits per square inch of original section	do	53, 000
Elongation per inch after rupture	inch..	0. 2150
Elongation per inch under strain at elastic limit	do....	.001750
Reduction in diameter at point of rupture	do....	.145
Reduction in area after rupture, per centum of original section		49. 1
Position of rupture		½ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		".81*, ".12

No. 1658.

Marks, $\genfrac{}{}{0pt}{}{32\ T_4}{M\ T_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

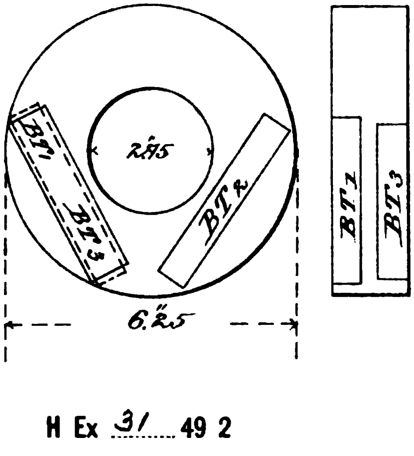
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000450	.000200	0.	....	
4, 000	20, 000	.000650	.000200	0.	....	
5, 000	25, 000	.000800	.000150	0.	....	
6, 000	30, 000	.001000	.000200	0.	....	
7, 000	35, 000	.001150	.000150	0.	....	
8, 000	40, 000	.001300	.000150	.000050	.000050	
9, 000	45, 000	.001400	.000100	.000050	0.	
9, 200	46, 000	.001450	.000050	....	....	
9, 400	47, 000	.001500	.000050	....	....	
9, 600	48, 000	.001550	.000050	....	....	
9, 800	49, 000	.001600	.000050	....	....	
10, 000	50, 000	.001650	.000050	.000100	.000050	Elastic limit.
10, 200	51, 000	.002000	.000350	....	....	
10, 400	52, 000	.002250	.000250	....	....	
10, 600	53, 000	.002800	.000550	....	....	
10, 800	54, 000	.004350	.001550	....	....	
11, 000	55, 000	.005850	.001500	.003900	.003800	
11, 200	56, 000	.006800	.000950	....	....	
11, 400	57, 000	.008000	.001200	....	....	
11, 600	58, 000	.009050	.001050	....	....	
11. 800	59, 000	.010450	.001400	....	....	
12, 000	60, 000	.011400	.000950	.009300	.005400	
12, 400	62, 000	.013700	.002300	....	....	
12. 800	64, 000	.016100	.002400	....	....	
13. 200	66, 000	.019150	.003050	....	....	
13, 600	68, 000	.022250	.003100	....	....	
14, 000	70, 000	.025600	.003350	....	....	
14, 400	72, 000	.028400	.002800	....	....	
14, 800	74, 000	.031600	.003200	....	....	
15, 200	76, 000	.035850	.004250	....	....	
15, 600	78, 000	.041000	.005150	....	....	
16, 000	80, 000	.046250	.005250	....	....	
16, 400	82, 000	.055000	.008750	....	....	
16, 800	84, 000	.066000	.011000	....	....	
17, 200	86, 000	.083500	.017500	....	....	
17, 370	86, 850	.1250	.0415	....	....	Tensile strength.

General summary.

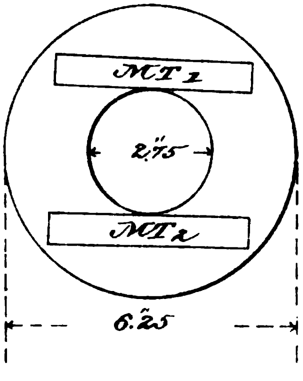
Tensile strength per square inch of original section..........pounds..	86, 850
Elastic limit per square inch of original section..........do....	50, 000
Elongation per inch after rupture..........inch..	0. 2250
Elongation per inch under strain at elastic limit..........do....	.001650
Reduction in diameter at point of rupture..........do....	.135
Reduction in area after rupture, per centum of original section..........	46. 2
Position of rupture..........	″.80 from neck
Character of broken surface..........	silky
Elongation of inch sections..........	″.35*, ″.10

Tube No. 5   3.″2 Rifle

Breech end



Muzzle end



No. 2240.

Marks, $\frac{33\ T_5}{B\ T}$,
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	1, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000550	.000250	0.	....	
4, 000	20, 000	.000800	.000250	0.	....	
5, 000	25, 000	.001050	.000250	.000050	.000050	
6, 000	30, 000	.001200	.000150	.000050	0.	
7, 000	35, 000	.001400	.000200	.000100	.000050	
8, 000	40, 000	.001550	.000150	.000100	0.	
9, 000	45, 000	.001700	.000150	.000100	0.	
9, 200	46, 000	.001750	.000050	....	....	
9, 400	47, 000	.001800	.000050	....	....	
9, 600	48, 000	.001800	0.	....	....	
9, 800	49, 000	.001800	0.	....	....	Elastic limit.
10, 000	50, 000	.003850	.002050	....	....	
10, 200	51, 000	.005850	.002000	....	....	
10, 400	52, 000	.007400	.001550	....	....	
10, 600	53, 000	.008650	.001250	....	....	
10, 800	54, 000	.010000	.001350	....	....	
11, 000	55, 000	.010750	.000750	....	....	
11, 200	56, 000	.012000	.001250	....	....	
11, 400	57, 000	.012750	.000750	....	....	
11, 600	58, 000	.013750	.001000	....	....	
11, 800	59, 000	.014750	.001000	....	....	
12, 000	60, 000	.015850	.001100	....	....	
12, 400	62, 000	.018500	.002650	....	....	
12, 800	64, 000	.020750	.002250	....	....	
13, 200	66, 000	.023500	.002750	....	....	
13, 600	68, 000	.026200	.002700	....	....	
14, 000	70, 900	.130000	.003800	....	....	
14, 400	72, 000	.034000	.004000	....	....	
14, 800	74, 000	.038000	.004000	....	....	
15, 200	76, 000	.042000	.004000	....	....	
15, 600	78, 000	.048500	.006500	....	....	
16, 000	80, 000	.057500	.009000	....	....	
16, 400	82, 000	.0700	.0125	....	....	
16, 800	84, 000	.0900	.0200	....	....	
17, 030	85, 150	.1350	.0450	....	....	Tensile strength.

General summary.

Specific gravity		7.8651
Tensile strength per square inch of original section	pounds..	85, 150
Elastic limit per square inch of original section	do....	49, 000
Elongation per inch after rupture	inch..	0.2250
Elongation per inch under strain at elastic limit	do....	.001800
Reduction in diameter at point of rupture	do....	.156
Reduction in area after rupture, per centum of original section		51.9
Position of rupture		1″ from neck
Character of broken surface		silky
Elongation of inch sections		″.32*, ″.13

No. 2241.

Marks, $\frac{82\,T}{B\,T}$.
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000550	.000250	0.	....	
4,000	20,000	.000750	.000200	0.	....	
5,000	25,000	.001000	.000250	0.	....	
6,000	30,000	.001250	.000250	0.	....	
7,000	35,000	.001400	.000150	0.	....	
8,000	40,000	.001600	.000200	0.	....	
9,000	45,000	.001750	.000150	0.	....	
9,200	46,000	.001850	.000100	....	....	Elastic limit.
9,400	47,000	.002050	.000200	....	....	
9,600	48,000	.003500	.001450	....	....	
9,800	49,000	.005000	.001500	....	....	
10,000	50,000	.006000	.001000	....	....	
10,200	51,000	.007250	.001250	....	....	
10,400	52,000	.008150	.000900	....	....	
10,600	53,000	.009250	.001100	....	....	
10,800	54,000	.010250	.001000	....	....	
11,000	55,000	.011250	.001000	....	....	
11,200	56,000	.011950	.000700	....	....	
11,400	57,000	.012800	.000850	....	....	
11,600	58,000	.014350	.001550	....	....	
11,800	59,000	.015500	.001150	....	....	
12,000	60,000	.016450	.000950	....	....	
12,400	62,000	.018750	.002300	....	....	
12,800	64,000	.021050	.002300	....	....	
13,200	66,000	.023750	.002700	....	....	
13,600	68,000	.026750	.003000	....	....	
14,000	70,000	.030600	.003850	....	....	
14,400	72,000	.034500	.003900	....	....	
14,800	74,000	.038000	.003500	....	....	
15,200	76,000	.043000	.005000	....	....	
15,600	78,000	.048500	.005500	....	....	
16,000	80,000	.057500	.009000	....	....	
16,400	82,000	.0650	.007500	....	....	
16,800	84,000	.0900	.0250	....	....	
17,140	85,700	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	85,700
Elastic limit per square inch of original section	do ...	46,000
Elongation per inch after rupture	inch..	0.2350
Elongation per inch under strain at elastic limit	do....	.001850
Reduction in diameter at point of rupture	do....	.155
Reduction in area after rupture, per centum of original section		51.9
Position of rupture		¾ inch from neck
Character of broken surface		silky, traces of granulation
Elongation of inch sections		″.35*, ″.12

No. 622.

Marks, $\substack{32\ T_6 \\ B\ T_2}$
Length, 3''.862.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000150	.000150	0.	....	
5, 000	10, 000	.000300	.000150	0.	....	
7, 500	15, 000	.000500	.000200	0.	....	
10, 000	20, 000	.000750	.000250	0.	....	
12, 500	25, 000	.000850	.000100	0.	....	
15, 000	30, 000	.001000	.000150	0.	....	
17, 500	35, 000	.001200	.000200	0.	....	
20, 000	40, 000	.001350	.000150	0.	....	
20, 500	41, 000	.001450	.000100	....	....	
21, 000	42, 000	.001500	.000050	....	....	
21, 500	43, 000	.001500	0.	....	....	
22, 000	44, 000	.001500	0.	....	....	
22, 500	45, 000	.001500	0.	0.	....	
23, 000	46, 000	.001550	.000050	....	....	
23, 500	47, 000	.001600	.000050	....	....	
24, 000	48, 000	.001650	.000050	....	....	Elastic limit.
24, 500	49, 000	.007250	.005600	....	....	
25, 000	50, 000	.007650	.000400	.005850	.005850	
46, 800	93, 600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	48, 000
Compression per inch under stress at elastic limit	inch..	.001650
Ultimate strength per square inch of original section	pounds..	93, 600
Manner of failure		triple flexure

No. 2242.

Marks, $\substack{32\ T_5 \\ M\ T_1}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.900150	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001050	.000150	0.	....	
8,000	40,000	.001200	.000150	0.	....	
9,000	45,000	.001450	.000250	0.	....	
9,200	46,000	.001500	.000050	....	....	
9,400	47,000	.001550	.000050	....	....	
9,600	48,000	.001600	.000050	....	....	
9,800	49,000	.001700	.000100	....	....	
10,000	50,000	.001700	0.	0.	....	
10,200	51,000	.001750	.000050	....	....	
10,400	52,000	.091750	0.	....	....	
10,600	53,000	.001800	.000050	....	....	
10,800	54,000	.001850	.000050	....	....	
11,000	55,000	.001900	.000050	....	....	Elastic limit.
11,200	56,000	.012000	.000100	....	....	
11,400	57,000	.013000	.001050	....	....	
11,600	58,000	.013650	.000650	....	....	
11,800	59,000	.014700	.001050	....	....	
12,000	60,000	.015800	.001100	....	....	
12,400	62,000	.018750	.002950	....	....	
12,800	64,000	.021300	.002550	....	....	
13,200	66,000	.024700	.003400	....	....	
13,600	68,000	.027500	.002800	....	....	
14,000	70,000	.031150	.003650	....	....	
14,400	72,000	.035250	.004100	....	....	
14,800	74,000	.039550	.004300	....	....	
15,200	76,000	.044250	.004700	....	....	
15,600	78,000	.051500	.007250	....	....	
16,000	80,000	.060500	.009000	....	....	
16,400	82,000	.0700	.0095	....	....	
16,800	84,000	.1100	.0400	....	....	
16,900	84,500	.1250	.0150	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	84,500
Elastic limit per square inch of original section	do ...	55,000
Elongation per inch after rupture	inch..	0.2250
Elongation per inch under strain at elastic limit	do....	.001900
Reduction in diameter at point of rupture	do....	.164
Reduction in area after rupture, per centum of original section		54.6
Position of rupture		½ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.35*, ″.10

No. 2243.

Marks, $\begin{smallmatrix}32 & T_3\\ M & T_2\end{smallmatrix}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.*	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001150	.000150	0.	....	
8,000	40,000	.001300	.000150	0.	....	
9,000	45,000	.001500	.000200	0.	....	
10,000	50,000	.001650	.000150	0.	....	
10,200	51,000	.001700	.000050	....	....	
10,400	52,000	.001750	.000050	....	....	
10,600	53,000	.001800	.000050	....	....	Elastic limit.
10,800	54,000	.006400	.004600	....	....	
11,000	55,000	.009050	.002650	....	....	
11,200	56,000	.010000	.000950	....	....	
11,400	57,000	.011250	.001250	....	....	
11,600	58,000	.012250	.001000	....	....	
11,800	59,000	.013250	.001000	....	....	
12,000	60,000	.014500	.001250	....	....	
12,400	62,000	.017000	.002500	....	....	
12,800	64,000	.019250	.002250	....	....	
13,200	66,000	.021750	.002500	....	....	
13,600	68,000	.024650	.002900	....	....	
14,000	70,000	.027750	.003100	....	....	
14,400	72,000	.032000	.004250	....	....	
14,800	74,000	.035750	.003750	....	....	
15,200	76,000	.040000	.004250	....	....	
15,600	78,000	.045750	.005750	....	....	
16,000	80,000	.053000	.007250	....	....	
16,400	82,000	.062500	.009500	....	....	
16,800	84,000	.0800	.0175	....	....	
17,200	86,000	.1100	.0300	....	....	
17,210	86,050	.1350	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 86,050
Elastic limit per square inch of original section ....do.... 53,000
Elongation per inch after rupture ....inch.. 0.2050
Elongation per inch under strain at elastic limit ....do.... .001800
Reduction in diameter at point of rupture ....do.... .145
Reduction in area after rupture, per centum of original section 49.1
Position of rupture .... ½ inch from neck
Character of broken surface ....silky
Elongation of inch sections ....″.32*, ″.09

No. 1693.

Marks, $\frac{32\ T_6}{B\ T_1}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2. 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000600	.000200	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000950	.000200	0.	....	
7, 000	35, 000	.001050	.000100	0.	....	
8, 000	40, 000	.001250	.000200	0.	....	
9, 000	45, 000	.001350	.000100	0.	....	
10, 000	50, 000	.001550	.000200	0.	....	
10, 200	51, 000	.001550	0.	....	....	
10, 400	52, 000	.001600	.000050	....	....	
10, 600	53, 000	.001650	.000050	....	....	
10, 800	54, 000	.001700	.000050	....	....	Elastic limit.
11, 000	55, 000	.001900	.000200	.000150	.000150	
11, 200	56, 000	.002450	.000550	....	....	
11, 400	57, 000	.004000	.001550	....	....	
11, 600	58, 000	.005850	.001850	....	....	
11, 800	59, 000	.006700	.000850	....	....	
12, 000	60, 000	.008050	.001350	.005830	.005700	
12, 400	62, 000	.010000	.001550	....	....	
12, 800	64, 000	.012750	.002150	....	....	
13, 200	66, 000	.014900	.002150	....	....	
13, 600	68, 000	.017550	.002650	....	....	
14, 000	70, 000	.020100	.002550	....	....	
14, 400	72, 000	.023050	.002950	....	....	
14, 800	74, 000	.027000	.003950	....	....	
15, 200	76, 000	.030500	.003500	....	....	
15, 600	78, 000	.034500	.004000	....	....	
16, 000	80, 000	.037600	.003100	....	....	
16, 400	82, 000	.043000	.005400	....	....	
16, 800	84, 000	.050000	.007000	....	....	
17, 200	86, 000	.059000	.009000	....	....	
17, 600	88, 000	.072500	.013500	....	....	
17, 870	89, 350	.1150	.0425	....	....	Tensile strength.

General summary.

Specific gravity		7. 8702
Tensile strength per square inch of original section	pounds..	89. 350
Elastic limit per square inch of original section	do ...	54. 000
Elongation per inch after rupture	inch..	0. 2100
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.114
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		⅜ inch from middle of stem
Character of broken surface		granular at circumference, dull center
Elongation of inch sections		″.30*, ″.12

No. 1694.

Marks, $^{32\,T_6}_{B\,T_2}$
Diameter, ".504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000550	.000200	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000900	.000200	0.	....	
7,000	35,000	.001000	.000100	0.	....	
8,000	40,000	.001200	.000200	0.	....	
9,000	45,000	.001350	.000150	0.	....	
10,000	50,000	.001550	.000200	0.	....	
10,200	51,000	.001600	.000050	....	....	
10,400	52,000	.001650	.000050	....	....	
10,600	53,000	.001650	0.	....	....	
10,800	54,000	.001700	.000050	....	....	
11,000	55,000	.001700	0.	0.	....	
11,200	56,000	.001800	.000100	....	....	Elastic limit.
11,400	57,000	.002450	.000650	....	....	
11,600	58,000	.003550	.001100	....	....	
11,800	59,000	.006150	.002600	....	....	
12,000	60,000	.007400	.001250	.005150	.005150	
12,400	62,000	.009150	.001750	....	....	
12,800	64,000	.011650	.002500	....	....	
13,200	66,000	.014200	.002550	....	....	
13,600	68,000	.016700	.002500	....	....	
14,000	70,000	.019150	.002450	....	....	
14,400	72,000	.022250	.003100	....	....	
14,800	74,000	.025150	.002900	....	....	
15,200	76,000	.028400	.003250	....	....	
15,600	78,000	.032250	.003850	....	....	
16,000	80,000	.037600	.005350	....	....	
16,400	82,000	.041500	.003900	....	....	
16,800	84,000	.047800	.006300	....	....	
17,200	86,000	.056250	.008450	....	....	
17,600	88,000	.073500	.017250	....	....	
17,990	89,950	.1250	.0515	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	89,950
Elastic limit per square inch of original section	do ...	56,000
Elongation per inch after rupture	inch..	0.2550
Elongation per inch under strain at elastic limit	do....	.001800
Reduction in diameter at point of rupture	do....	.154
Reduction in area after rupture, per centum of original section		51.9
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		".30*, ".21

No. 577.

Marks, $^{32\ T_6}_{B\ T_3}$
Length, 3″.998.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	0.	.000150	0.	....	
7, 500	15, 000	.000150	.000150	0.	....	
20, 000	40, 000	.001250	.001100	....	....	
20, 500	41, 000	.001300	.000050	....	....	
21, 000	42, 000	.001350	.000050	....	....	
21, 500	43, 000	.001850	0.	....	....	
22, 000	44, 000	.001400	.000050	....	....	
22, 500	45, 000	.001450	.000050	.000050	.000050	
23, 000	46, 000	.001450	0.	....	....	
23, 500	47, 000	.001500	.000050	....	....	
24, 000	48, 000	.001500	0.	....	....	
24, 500	49, 000	.001550	.000050	....	....	
25, 000	50, 000	.001600	.000050	.000050	0.	
25, 500	51, 000	.001650	.000050	....	....	
26, 000	52, 000	.001700	.000050	....	....	
26, 500	53, 000	.001750	.000050	....	....	
27, 000	54, 000	.001750	0.	....	....	Elastic limit.
27, 500	55, 000	.002550	.000800	.000650	.000600	
28, 000	56, 000	.002950	.000400	....	....	
28, 500	57, 000	.003400	.000450	....	....	
29, 000	58, 000	.004100	.000700	....	....	
29, 500	59, 000	.005050	.000950	....	....	
30, 000	60, 000	.006050	.001000	.008900	.008250	
48, 300	96, 600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section..................................pounds..	54, 000
Compression per inch under stress at elastic limit..................................inch..	0. 001750
Ultimate strength per square inch of original section..................................pounds..	96, 600
Manner of failure	triple flexure

Marks, 32 T, M T, 1. No. 1695.
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	*Per square inch.*					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000400	.000200	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001000	.000150	0.	....	
8,000	40,000	.001200	.000200	0.	....	
9,000	45,000	.001300	.000100	0.	....	
10,000	50,000	.001450	.000150	0.	....	
10,200	51,000	.001500	.000050	....	....	Elastic limit.
10,400	52,000	.004100	.002600	....	....	
10,600	53,000	.005600	.001500	....	....	
10,800	54,000	.006550	.000950	....	....	
11,000	55,000	.007700	.001150	.005600	.005600	
11,200	56,000	.008650	.000950	....	....	
11,400	57,000	.009650	.001000	....	....	
11,600	58,000	.010500	.000850	....	....	
11,800	59,000	.011650	.001150	....	....	
12,000	60,000	.012750	.001100	.010350	.004750	
12,400	62,000	.014800	.002050	....	....	
12,800	64,000	.017400	.002600	....	....	
13,200	66,000	.019600	.002200	....	....	
13,600	68,000	.022650	.003050	....	....	
14,000	70,000	.025600	.002950	....	....	
14,400	72,000	.028900	.003300	....	....	
14,800	74,000	.032500	.003600	....	....	
15,200	76,000	.036850	.004350	....	....	
15,600	78,000	.041500	.004650	....	....	
16,000	80,000	.047250	.005750	....	....	
16,400	82,000	.056750	.009500	....	....	
16,800	84,000	.066800	.010050	....	....	
17,200	86,000	.0850	.0182	....	....	
17,420	87,100	.1300	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	87,100
Elastic limit per square inch of original section	do....	51,000
Elongation per inch after rupture	inch..	0.2450
Elongation per inch under strain at elastic limit	do....	.001500
Reduction in diameter at point of rupture	do....	.154
Reduction in area after rupture, per centum of original section		51.9
Position of rupture		⅝ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.38*, ″.11

No. 1696.

Marks, $\genfrac{}{}{0pt}{}{32\ T_6}{M\ T_2}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000300	.000200	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000950	.000200	0.	....	
7, 000	35, 000	.001100	.000150	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001400	.000150	0.	....	
10, 000	50, 000	.001550	.000150	0.	....	
10, 200	51, 000	.001600	.000050	....	....	
10, 400	52, 000	.001650	.000050	....	....	
10, 600	53, 000	.001700	.000050	....	....	Elastic limit.
10, 800	54, 000	.001950	.000250	....	....	
11, 000	55, 000	.003050	.001100	.001150	.001150	
11, 200	56, 000	.004500	.001450	....	....	
11, 400	57, 000	.006150	.001650	....	....	
11, 600	58, 000	.007150	.001000	....	....	
11, 800	59, 000	.008350	.001200	.....	....	
12, 000	60, 000	.009350	.001000	.007150	.006000	
12, 400	62, 000	.011700	.002350	....	....	
12, 800	64, 000	.013750	.002050	....	....	
13, 200	66, 000	.016500	.002750	....	....	
13, 600	68, 000	.018700	.002200	....	....	
14, 000	70, 000	.021250	.002550	....	....	
14, 400	72, 000	.024500	.003250	....	....	
14, 800	74, 000	.027700	.003200	....	....	
15, 200	76, 000	.031000	.003300	....	....	
15, 600	78, 000	.034750	.003750	....	....	
16, 000	80. 000	.039350	.004600	....	....	
16, 400	82, 000	.045750	.006400	....	....	
16, 800	84, 000	, 052750	.007000	....	....	
17, 200	86, 000	.062500	.009750	....	....	
17, 600	88, 000	.079500	.017000	....	....	
17, 860	89, 300	.1300	.0505	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pound	89, 300
Elastic limit per square inch of original section	do	53, 000
Elongation per inch after rupture	inch	0. 2350
Elongation per inch under strain at elastic limit	do	.001700
Reduction in diameter at point of rupture	do	.154
Reduction in area after rupture, per centum of original section		51. 9
Position of rupture		″.1 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.32* ″.15

No. 2200.

Marks, $\frac{32\,\mathrm{T}_7}{\mathrm{BT}_1}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000600	.000200	0.	....	
5, 000	25, 000	.000700	.000100	0.	....	
6, 000	30, 000	.000850	.000150	0.	....	
7, 000	35, 000	.001000	.000150	0.	....	
8, 000	40, 000	.001200	.000200	0.	....	
9, 000	45, 000	.001400	.000200	0.	....	
10, 000	50, 000	.001550	.000150	0.	....	
10, 200	51, 000	.001600	.000050	....	....	
10, 400	52, 000	.001050	.000050	....	....	
10, 600	53, 000	.001700	.000050	....	....	
10, 800	54, 000	.001700	0.	....	....	
11, 000	55, 000	.001750	.000050	....	....	
11, 200	56, 000	.001800	.000050	....	....	
11, 400	57, 000	.001850	.000050	....	....	
11, 600	58, 000	.001900	.000050	....	....	Elastic limit.
11, 800	59, 000	.002200	.000300	....	....	
12, 000	60, 000	.003200	.001000	....	....	
12, 200	61, 000	.004600	.001400	....	....	
12, 400	62, 000	.007100	.002500	....	....	
12, 600	63, 000	.008450	.001350	....	....	
12, 800	64, 000	.009600	.001150	....	....	
13, 000	65, 000	.010650	.001050	....	....	
13, 200	66, 000	.011850	.001200	....	....	
13, 400	67, 000	.012900	.001050	....	....	
13, 600	68, 000	.014050	.001150	....	....	
13, 800	69, 000	.015250	.001200	....	....	
14, 000	70, 000	.016500	.001250	....	....	
14, 400	72, 000	.019000	.002500	....	....	
14, 800	74, 000	.021500	.002500	....	....	
15, 200	76, 000	.024700	.003200	....	....	
15, 600	78, 000	.028000	.003300	....	....	
16, 000	80, 000	.032000	.0040 0	....	....	
16, 400	82, 000	.036400	.004400	....	....	
16, 800	84, 000	.040600	.004200	....	....	
17, 200	86, 000	.046150	.005550	....	....	
17, 600	88, 000	.053000	.006850	....	....	
18, 000	90, 000	.0650	.0120	....	....	
18, 400	92, 000	.0950	.0300	....	....	
18, 490	92, 450	.1150	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	92, 450
Elastic limit per square inch of original section ....do....	58, 000
Elongation per inch after rupture ....inch..	0. 2350
Elongation per inch under strain at elastic limit ....do...	.001900
Reduction in diameter at point of rupture ....do...	.145
Reduction in area after rupture, per centum of original section	49. 1
Position of rupture	¾ inch from neck
Character of broken surface	silky center, granular at circumference
Elongation of inch sections	".12, ".35*

No. 2201.

Marks, $\substack{32\ T_7 \\ B\ T_2}$
Diameter, ''.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch,	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	. 000150	. 000150	0.	....	
2, 000	10, 000	. 000350	. 000200	0.	....	
3, 000	15, 000	. 000500	. 000150	0.	....	
4, 000	20, 000	. 000650	. 000150	0.	....	
5, 000	25, 000	. 000850	. 000200	0.	....	
6, 000	30, 000	. 001000	. 000150	0.	....	
7, 000	35, 000	. 001200	. 000200	0.	....	
8, 000	40, 000	. 001350	. 000150	0.	....	
9, 000	45, 000	. 001500	. 000150	0.	....	
10, 000	50, 000	. 001650	. 000150	0.	....	
10, 200	51, 000	. 001700	. 000050	....	....	
10, 400	52, 000	. 001750	. 000050	....	....	
10, 600	53, 000	. 001800	. 000050	....	....	
10, 800	54, 000	. 001850	. 000050	....	....	
11, 000	55, 000	. 001900	. 000050	....	....	
11, 200	56, 000	. 001900	0.	....	....	
11, 400	57, 000	. 001950	. 000050	....	....	Elastic limit.
11, 600	58, 000	. 002100	. 000150	....	....	
11, 800	59, 000	. 002550	. 000450	....	....	
12, 000	60, 000	. 003000	. 000450	. 000950	. 000950	
12, 400	62, 000	. 004250	. 001250	....	....	
12, 800	64, 400	. 007100	. 002850	....	....	
13, 200	66, 000	. 010600	. 003500	....	....	
13, 600	68, 000	. 013250	. 002650	....	....	
14, 000	70, 000	. 015900	. 002650	....	....	
14, 400	72, 000	. 018000	. 002100	....	....	
14, 800	74, 000	. 020600	. 002600	....	....	
15, 200	76, 000	. 024000	. 003400	....	....	
15, 600	78, 000	. 027500	. 003500	....	....	
16, 000	80, 000	. 031000	. 002500	....	....	
16, 400	82, 000	. 035000	. 004000	....	....	
16, 800	84, 000	. 039750	. 004750	....	....	
17, 200	86, 000	. 045600	. 005850	....	....	
17, 600	88, 000	. 052500	. 006900	....	....	
18, 000	90, 000	. 0650	. 0125	....	....	
18, 390	91, 950	. 1000	. 0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	91, 950
Elastic limit per square inch of original section	do ...	57, 000
Elongation per inch after rupture	inch..	0. 1700
Elongation per inch under strain at elastic limit	do....	. 001950
Reduction in diameter at point of rupture	do....	. 134
Reduction in area after rupture, per centum of original section	....	46. 2
Position of rupture		''.30 from neck
Character of broken surface		silky, 50 per cent. ; granular, 50 per cent.
Elongation of inch sections		''.26*, ''.08

No. 615.

Marks, $\frac{32\ T_7}{B\ T_8}$
Length, 4″.
Diameter, ″.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000400	.000150	0.	....	
10,000	20,000	.000500	.000100	0.	....	
12,500	25,000	.000650	.000150	0.	....	
15,000	30,000	.000800	.000150	— .000050	— .000050	
17,500	35,000	.000950	.000150	— .000050	0.	
20,000	40,000	.001100	.000150	— .000050	0.	
22,500	45,000	.001300	.000200	— .000050	0.	
23,000	46,000	.001350	.000050	....	....	
23,500	47,000	.001400	.000050	....	....	
24,000	48,000	.001450	.000050	....	....	
24,500	49,000	.001500	.000050	....	....	
25,000	50,000	.001550	.000050	— .000100	— .000050	
25,500	51,000	.001600	.000050	....	....	
26,000	52,000	.001650	.000050	....	....	
26,500	53,000	.001700	.000050	....	....	
27,000	54,000	.001750	.000050	....	....	Elastic limit.
27,500	55,000	.001900	.000150	.000100	.000200	
28,000	56,000	.002050	.000150	....	....	
28,500	57,000	.002350	.000300	....	....	
29,000	58,000	.003000	.000650	....	....	
29,500	59,000	.004100	.001100	....	....	
30,000	60,000	.005750	.001650	.003600	.003500	
47,600	95,200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	54,000
Compression per inch under stress at elastic limit	inch..	0.001750
Ultimate strength per square inch of original section	pounds..	95,200
Manner of failure		triple flexure

No. 2202

Marks, $\frac{82\ T,}{M\ T,}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000700	.000100	0.	....	
6,000	30,000	.000950	.000250	0.	....	
7,000	35,000	.001150	.000200	0.	....	
8,000	40,000	.001250	.000100	0.	....	
9,000	45,000	.001400	.000150	0.	....	
10,000	50,000	.001600	.000200	0.	....	Elastic limit.
10,200	51,000	.008750	.007150	....	....	
10,400	52,000	.009500	.000750	....	....	
10,600	53,000	.010500	.001000	....	....	
10,800	54,000	.011650	.001150	....	....	
11,000	55,000	.012500	.000850	....	....	
11,200	56,000	.013600	.001100	....	....	
11,400	57,000	.014850	.001250	....	....	
11,600	58,000	.016000	.001150	....	....	
11,800	59,000	.017250	.001250	....	....	
12,000	60,000	.018750	.001500	....	....	
12,400	62,000	.021300	.002650	....	....	
12,800	64,000	.024250	.002950	....	....	
13,200	66,000	.027000	.002750	....	....	
13,600	68,000	.031000	.004000	....	....	
14,000	70,000	.034500	.003500	....	....	
14,400	72,000	.039000	.004500	....	....	
14,800	74,000	.044500	.005500	....	....	
15,200	76,000	.051000	.006500	....	....	
15,600	78,000	.0600	.0090	....	....	
16,000	80,000	.0700	.0100	....	....	
16,400	82,000	.1000	.0300	....	....	
16,620	83,100	.1350	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	83,100
Elastic limit per square inch of original section	do ...	50,000
Elongation per inch after rupture	inch..	0.2400
Elongation per inch under strain at elastic limit	do....	.001600
Reduction in diameter at point of rupture	do....	.145
Reduction of area after rupture, per centum of original section		49.1
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		".11, ".37*

No. 2203.

Marks, $\substack{32\ T_7 \\ M\ T_3}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000200	.000200	.000050	.000050	
2,000	10,000	.000450	.000250	.000050	0.	
3,000	15,000	.000600	.000150	.000050	0.	
4,000	20,000	.000750	.000150	.000050	0.	
5,000	25,000	.000950	.000200	.000050	0.	
6,000	30,000	.001100	.000150	.000050	0.	
7,000	35,000	.001250	.000150	.000100	0.	
8,000	40,000	.001400	.000150	.000100	0.	
9,000	45,000	.001550	.000150	.000100	0.	
9,200	46,000	.001550	0.	....	....	
9,400	47,000	.001600	.000050	....	....	
9,600	48,000	.001650	.000050	....	....	
9,800	49,000	.001700	.000050	....	....	
10,000	50,000	.001750	.000050	.000100	.0	
10,200	51,000	.001800	.000050	....	....	
10,400	52,000	.001850	.000050	....	....	Elastic limit.
10,600	53,000	.006200	.004350	....	....	
10,800	54,000	.009100	.002900	....	....	
11,000	55,000	.010000	.000900	....	....	
11,200	56,000	.011000	.001000	....	....	
11,400	57,000	.012050	.001050	....	....	
11,600	58,000	.012900	.000850	....	....	
11,800	59,000	.014050	.001150	....	....	
12,000	60,000	.015150	.001100	....	....	
12,400	62,000	.017300	.002150	....	....	
12,800	64,000	.019800	.002500	....	....	
13,200	66,000	.022500	.002700	....	....	
13,600	68,000	.026000	.003500	....	....	
14,000	70,000	.029000	.003000	....	....	
14,400	72,000	.032700	.003700	....	....	
14,800	74,000	.037050	.004350	....	....	
15,200	76,000	.041500	.004450	....	....	
15,600	78,000	.047500	.006000	....	....	
16,000	80,000	.055000	.007500	....	....	
16,400	82,000	.0650	.0100	....	....	
16,800	84,000	.0800	.0150	....	....	
17,200	86,000	.1100	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	86,000
Elastic limit per square inch of original section	do	52,000
Elongation per inch after rupture	inch..	0.2250
Elongation per inch under strain at elastic limit	do	.001850
Reduction in diameter at point of rupture	do	.144
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.34*, ″.11

No. 1659.

Marks, $^{32\,T_8}_{B\,T_1}$
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000450	.000100	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000850	.000200	0.	....	
6,000	30,000	.001000	.000150	0.	....	
7,000	35,000	.001200	.000200	0.	....	
8,000	40,000	.001350	.000150	0.	....	
9,000	45,000	.001500	.000150	....	....	
9,800	49,000	.001650	.000150	....	....	Elastic limit.
10,000	50,000	.002100	.000450	.000450	.000450	
10,200	51,000	.003850	.001750	....	....	
10,400	52,000	.005100	.001250	....	....	
10,600	53,000	.006100	.001000	....	....	
10,800	54,000	.007000	.000900	....	....	
11,000	55,000	.007900	.000900	.005850	.005400	
11,200	56,000	.008550	.000650	....	....	
11,400	57,000	.009750	.001200	....	....	
11,600	58,000	.010250	.000500	....	....	
11,800	59,000	.011250	.001000	....	....	
12,000	60,000	.012150	.000900	.009850	.004000	
12,400	62,000	.014150	.002000	....	....	
12,800	64,000	.016250	.002100	....	....	
13,200	66,000	.018500	.002250	....	....	
13,600	68,000	.021000	.002500	....	....	
14,000	70,000	.023400	.002400	....	....	
14,400	72,000	.025950	.002550	....	....	
14,800	74,000	.029000	.003050	....	....	
15,200	76,000	.031800	.002800	....	....	
15,600	78,000	.035000	.003200	....	....	
16,000	80,000	.039300	.004300	....	....	
16,400	82,000	.044150	.004850	....	....	
16,800	84,000	.049800	.005650	....	....	
17,200	86,000	.057500	.007700	....	....	
17,600	88,000	.067000	.009500	....	....	
18,000	90,000	.0850	.0180	....	....	
18,320	91,600	.1250	.0400	....	....	Tensile strength.

General summary.

Specific gravity		7.8730
Tensile strength per square inch of original section	pounds..	91,600
Elastic limit per square inch of original section	do....	49,000
Elongation per inch after rupture	inch..	0.2250
Elongation per inch under strain at elastic limit	do....	.001650
Reduction in diameter at point of rupture	do	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		¼ inch from middle of stem
Character of broken surface		silky
Elongation of inch section		''.32*, ''.13

No. 1660.

Marks, $\frac{32\ T_3}{B\ T_3}$

Diameter, ".505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001250	.000150	0.	....	
9,000	45,000	.001450	.000200	0.	....	
9,600	48,000	.001600	.000150	....	....	
9,800	49,000	.001650	.000050	....	....	Elastic limit.
10,000	50,000	.002150	.000500	.000600	.000600	
10,200	51,000	.002650	.000500	....	....	
10,400	52,000	.003100	.000450	....	....	
10,600	53,000	.003850	.000750	....	....	
10,800	54,000	.004950	.001100	....	....	
11,000	55,000	.005850	.000900	.003850	.003250	
11,200	56,000	.006800	.000950	....	....	
11,400	57,000	.007800	.001000	....	....	
11,600	58,000	.008600	.000800	....	....	
11,800	59,000	.009700	.001100	....	....	
12,000	60,000	.010600	.000900	.008250	.004400	
12,400	62,000	.012750	.002150	....	....	
12,800	64,000	.014600	.001850	....	....	
13,200	66,000	.016850	.002250	....	....	
13,600	68,000	.019750	.002900	....	....	
14,000	70,000	.022250	.002500	....	....	
14,400	72,000	.025000	.002750	....	....	
14,800	74,000	.027500	.002500	....	....	
15,200	76,000	.030750	.003250	....	....	
15,600	78,000	.034250	.003500	....	....	
16,000	80,000	.038000	.003750	....	....	
16,400	82,000	.043000	.005000	....	....	
16,800	84,000	.048250	.005250	....	....	
17,200	86,000	.055500	.007250	....	....	
17,600	88,000	.066000	.010500	....	....	
18,000	90,000	.081250	.015250	....	....	
18,260	91,300	.1100	.028750	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	91,300
Elastic limit per square inch of original section	do ...	49,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do....	.001650
Reduction in diameter at point of rupture	do....	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		[illegible] inch from neck
Character of broken surface		silky
Elongation of inch sections		".31*, ".09

No. 569.

Marks, ${}^{32}_{B}{}^{T_8}_{T_3}$
Length, 3″.998.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15. 000	.000350	.000100	0.	....	
10, 000	20, 000	.000500	.000150	0.	....	
12, 500	25, 000	.000650	.000150	0.	....	
15, 000	30, 000	.000800	.000150	0.	....	
17, 500	35, 000	.000950	.000150	0.	....	
20, 000	40, 000	.001100	.000150	.000000	.000000	
22, 500	45, 000	.001250	.000150	....	....	
24, 060	48, 000	.001200	.000050	....	....	Elastic limit.
24, 500	49, 000	.001100	.000100	....	....	
25, 000	50, 000	.000950	.000150	— .000450	— .000450	Deflects convex on the micrometer side of the specimen.
25, 500	51, 000	.000600	.000250	....	....	
26, 000	52, 000	.000350	.000250	....	....	
26, 500	53, 000	.000150	.000200	....	....	
27, 000	54, 000	.000100	.000050	....	....	
27, 500	55, 000	.000100	0.	— .001450	— .001000	
47, 650	95, 300	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section..pounds.. 48, 000
Compression per inch under stress at elastic limit..inch.. 0. 001200
Ultimate strength per square inch of original section..pounds.. 95, 300
Manner of failure..triple flexure

No. 1661.

Marks, $\begin{smallmatrix}32 & T_8 \\ M & T_1\end{smallmatrix}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000950	.000200	0.	....	
7, 000	35, 000	.001100	.000150	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001500	.000250	0.	....	
9, 200	46, 000	.001500	0.	....	....	
9, 400	47, 000	.001550	.000050	....	....	
9, 600	48, 000	.001550	0.	....	....	
9, 800	49, 000	.001600	.000050	....	....	
10, 000	50, 000	.001650	.000050	0.	....	
10, 200	51, 000	.001700	.000050	....	....	
10, 400	52, 000	.001750	.000050	....	....	
10, 600	53, 000	.001850	.000100	....	....	Elastic limit.
10, 800	54, 000	.002250	.000400	....	....	
11, 000	55, 000	.003800	.001550	.001950	.001950	
11, 200	56, 000	.004550	.000750	....	....	
11, 400	57, 000	.006250	.001700	....	....	
11, 600	58, 000	.008000	.001750	....	....	
11, 800	59, 000	.009100	.001100	....	....	
12, 000	60, 000	.009650	.000550	.007450	.005500	
12, 400	62, 000	.012150	.002500	....	....	
12, 800	64, 000	.014350	.002200	....	....	
13, 200	66, 000	.017150	.002800	....	....	
13, 600	68, 000	.020150	.003000	....	....	
14, 000	70, 000	.023150	.003000	....	....	
14, 400	72, 000	.026250	.003100	....	....	
14, 800	74, 000	.029750	.003500	....	....	
15, 200	76, 000	.034000	.004250	....	....	
15, 600	78, 000	.038750	.004750	....	....	
16, 000	80, 000	.044500	.005750	....	....	
16, 400	82, 000	.052000	.007500	....	....	
16, 800	84, 000	.061600	.009600	....	....	
17, 200	86, 000	.081500	.019900	....	....	
17, 470	87, 350	.1300	.0485	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	87, 350
Elastic limit per square inch of original section	do	53, 000
Elongation per inch after rupture	inch..	0. 2200
Elongation per inch under strain at elastic limit	do....	.001850
Reduction in diameter at point of rupture	do....	.135
Reduction in area after rupture, per centum of original section		46. 2
Position of rupture		″.65 from neck
Character of broken surface		silky
Elongation of inch sections		″.33*, ″.11

No. 1662.

Marks, $\begin{matrix}32\ T_8\\ M\ T_2\end{matrix}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.		
2, 000	10, 000	.000350	.000200	0.		
3, 000	15, 000	.000550	.000200	0.		
4, 000	20, 000	.000700	.000150	0.		
5, 000	25, 000	.000850	.000150	0.		
6, 000	30, 000	.001000	.000150	0.		
7, 000	35, 000	.001150	.000150	0.		
8, 000	40, 000	.001300	.000150	0.		
9, 000	45, 000	.001450	.000150	0.		
9, 200	46, 000	.001450	0.			
9, 400	47, 000	.001500	.000050			
9, 600	48, 000	.001500	0.			
9, 800	49, 000	.001550	.000050			
10, 000	50, 000	.001600	.000050	0.		
10, 200	51, 000	.001600	0.			
10, 400	52, 000	.001650	.000050			
10, 600	53, 000	.001700	.000050			
10, 800	54, 000	.001800	.000100			Elastic limit.
11, 000	55, 000	.002150	.000350	.000400	.000100	
11, 200	56, 000	.002900	.000750			
11, 400	67, 000	.003500	.000600			
11, 600	58, 000	.004200	.000700			
11, 800	59, 000	.006450	.002250			
12, 000	60, 000	.007900	.001450	.005800	.005400	
12, 400	62, 000	.010350	.002450			
12, 800	64, 000	.012150	.001800			
13, 200	66, 000	.015000	.002850			
13, 600	68, 000	.017600	.002600			
14, 000	70, 000	.020600	.003000			
14, 400	72, 000	.023500	.002900			
14, 800	74, 000	.026700	.003200			
15, 200	76, 000	.030250	.003550			
15, 600	78, 000	.034500	.004250			
16, 000	80, 000	.039350	.004850			
16, 400	82, 000	.045600	.006250			
16, 800	84, 000	.052750	.007150			
17, 200	86, 000	.063750	.011000			
17, 600	88, 000	.083750	.020000			
17, 740	88, 700	.1300	.046250			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	88, 700
Elastic limit per square inch of original section	do....	54, 000
Elongation per inch after rupture	inch..	0. 2450
Elongation per inch under strain at elastic limit	do....	.001800
Reduction in diameter at point of rupture	do....	.125
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		″.20 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.30*, ″.19

No. 2204.

Marks, $^{32\ T_1}_{B\ T_1}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000200	.000200	0.		
2, 000	10, 000	.000300	.000100	0.		
3, 000	15, 000	.000450	.000150	0.		
4, 000	20, 000	.000650	.000200	0.		
5, 000	25, 000	.000800	.000150	0.		
6, 000	30, 000	.000950	.000150	0.		
7, 000	35, 000	.001200	.000250	0.		
8, 000	40, 000	.001300	.000100	0.		
9, 000	45, 000	.001450	.000150	0.		
10, 000	50, 000	.001650	.000200	0.		
10, 200	51, 000	.001700	.000050			
10, 400	52, 000	.001750	.000050			
10, 600	53, 000	.001800	.000050			
10, 800	54, 000	.001800	0.			
11, 000	55, 000	.001850	.000050			
11, 200	56, 000	.001900	.000050			Elastic limit.
11, 400	57, 000	.002050	.000150			
11, 600	58, 000	.002250	.000200			
11, 800	59, 000	.002800	.000550			
12, 000	60, 000	.003800	.001000			
12, 200	61, 000	.005250	.001450			
12, 400	62, 000	.007300	.002050			
12, 600	63, 000	.008600	.001300			
12, 800	64, 000	.010050	.001450			
13, 000	65, 000	.011500	.001450			
13, 200	66, 000	.013000	.001500			
13, 400	67, 000	.014500	.001500			
13, 600	68, 000	.015500	.001000			
13, 800	69, 000	.016750	.001250			
14, 000	70, 000	.017750	.001000			
14, 400	72, 000	.020150	.002400			
14, 800	74, 000	.023500	.003350			
15, 200	76, 000	.026500	.003000			
15, 600	78, 000	.030000	.003500			
16, 000	80, 000	.034100	.004100			
16, 400	82, 000	.039000	.004900			
16, 800	84, 000	.044750	.005750			
17, 200	86, 000	.053000	.008250			
17, 600	88, 000	.0600	.0070			
18, 000	90, 000	.0950	.0350			
18, 090	90, 450	.1150	.0200			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	90, 450
Elastic limit per square inch of original section	do....	56, 000
Elongation per inch after rupture	inch..	0. 2450
Elongation per inch under strain at elastic limit	do....	.001900
Reduction in diameter at point of rupture	do....	.134
Reduction in area after rupture, per centum of original section		46. 2
Position of rupture		at middle of stem
Character of broken surface		granular, 60 per centum; silky, 40 per centum
Elongation of inch sections		″.25⁺, ″.24*

No. 2205.

Marks, $^{32\,\mathrm{T},}_{\mathrm{B\,T},}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001150	.000150	0.	....	
8,000	40,000	.001300	.000150	0.	....	
9,000	45,000	.001450	.000150	0.	....	
10,000	50,000	.001600	.000150	0.	....	
10,200	51,000	.001650	.000050	....	....	
10,400	52,000	.001700	.000050	....	....	
10,600	53,000	.001750	.000050	....	....	
10,800	54,000	.001800	.000050	....	....	
11,000	55,000	.001850	.000050	....	....	
11,200	56,000	.001900	.000050	....	....	
11,400	57,000	.001950	.000050	....	....	
11,600	58,000	.002000	.000050	....	....	
11,800	59,000	.002100	.000100	....	....	Elastic limit.
12,000	60,000	.002250	.000150	....	....	
12,200	61,000	.002750	.000500	....	....	
12,400	62,000	.004000	.001250	....	....	
12,600	63,000	.006200	.002200	....	....	
12,800	64,000	.007700	.001500	....	....	
13,000	65,000	.009000	.001300	....	....	
13,200	66,000	.010150	.001150	....	....	
13,400	67,000	.011500	.001350	....	....	
13,600	68,000	.012500	.001000	....	....	
13,800	69,000	.013500	.001000	....	....	
14,000	70,000	.014700	.001200	....	....	
14,400	72,000	.017000	.002300	....	....	
14,800	74,000	.019500	.002500	....	....	
15,200	76,000	.022800	.003300	....	....	
15,600	78,000	.025650	.002850	....	....	
16,000	80,000	.029000	.003350	....	....	
16,400	82,000	.032800	.003800	....	....	
16,800	84,000	.037500	.004700	....	....	
17,200	86,000	.042500	.005000	....	....	
17,600	88,000	.051000	.008500	....	....	
18,000	90,000	.0600	.0090	....	....	
18,400	92,000	.0700	.0100	....	....	
18,610	93,050	.1300	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	93,050
Elastic limit per square inch of original section	do....	59,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do....	.002100
Reduction in diameter at point of rupture	do....	.124
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		at middle of stem
Character of broken surface		granular, dull silky center
Elongation of inch sections		″.16, ″.24*

No. 616.

Marks, $\overset{32\ T_9}{B\ T_3}$
Length, 3''.998.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000550	.000150	0.	....	
12, 500	25, 000	.000750	.000200	0.	....	
15, 000	30, 000	.000900	.000150	0.	....	
17, 500	35, 000	.001050	.000150	0.	....	
20, 000	40, 000	.001250	.000200	0.	....	
22, 500	45, 000	.001400	.000150	0.	....	
25, 000	50, 000	.001500	.000100	0.	....	
25, 500	51, 000	.001500	0.	....	....	
26, 000	52, 000	.001550	.000050	....	....	
26, 500	53, 000	.001600	.000050	....	....	
27, 000	54, 000	.001700	.000100	....	....	
27, 500	55, 000	.001750	.000050	.000100	.000100	
28, 000	56, 000	.001750	0.	....	....	
28, 500	57, 000	.001800	.000050	....	....	
29, 000	58, 000	.001850	.000050	....	....	
29, 500	59, 000	.001800	.000050	....	....	
30, 000	60, 000	.001750	.000050	— .000100	.000200	
30, 500	61, 000	.001750	0.	....	....	
31, 000	62, 000	.001800	.000050	....	....	Elastic limit.
31, 500	63, 000	.002100	.000300	....	....	
32, 000	64, 000	.002500	.000400	....	....	
32, 500	65, 000	.003250	.000750	.001250	.001350	
33, 000	66, 000	.004100	.000850	....	....	
33, 500	67, 000	.005200	.001100	....	....	
34, 000	68, 000	.006500	.001300	....	....	
34, 500	69, 000	.007500	.001000	....	....	
35, 000	70, 000	.008500	.001000	.006250	.005000	
48, 800	97, 600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds.. 62, 000
Compression per inch under stress at elastic limit ....inch.. 0. 001800
Ultimate strength, per square inch of original section....................................pounds.. 97. 600
Manner of failure ....triple flexure

No. 2206.

Marks, $^{32\ T,}_{M\ T,}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	. 000100	. 000100	0.	....	
2, 000	10, 000	. 000300	. 000200	0.	....	
3, 000	15, 000	. 000450	. 000150	0.	....	
4, 000	20, 000	. 000600	. 000150	0.	....	
5, 000	25, 000	. 000800	. 000200	0.	....	
6, 000	30, 000	. 001000	. 000200	0.	....	
7, 000	35, 000	. 001150	. 000150	0.	....	
8, 000	40, 000	. 001350	. 000200	0.	....	
9, 000	45, 000	. 001550	. 000200	0.	....	
10, 000	50, 000	. 001700	. 000150	0.	....	
10, 200	51, 000	. 001700	0.	....	....	
10, 400	52, 000	. 001750	. 000050	....	....	
10, 600	53, 000	. 001750	0.	....	....	
10, 800	54, 000	. 001800	. 000050	....	....	
11, 000	55, 000	. 001850	. 000050	....	....	
11, 200	56, 000	. 001900	. 000050	....	....	Elastic limit.
11, 400	57, 000	. 002050	. 000150	....	....	
11, 600	58, 000	. 002250	. 000200	....	....	
11, 800	59, 000	. 003000	. 000750	....	....	
12, 000	60, 000	. 003900	. 000900	....	....	
12, 200	61, 000	. 005300	. 001400	....	....	
12, 400	62, 000	. 007250	. 001950	....	....	
12, 600	63, 000	. 008200	. 000950	....	....	
12, 800	64, 000	. 009250	. 001050	....	....	
13, 000	65, 000	. 011000	. 001750	....	....	
13, 200	66, 000	. 012200	. 001200	....	....	
13, 600	68, 000	. 014750	. 002550	....	....	
14, 000	70, 000	. 016500	. 001750	....	....	
14, 400	72, 000	. 018600	. 002100	....	....	
14, 800	74, 000	. 022250	. 003650	....	....	
15, 200	76, 000	. 025300	. 003050	....	....	
15, 600	78, 000	. 028000	. 002700	....	....	
16, 000	80, 000	. 031250	. 003250	....	....	
16, 400	82, 000	. 035750	. 004500	....	....	
16, 800	84, 000	. 040500	. 004750	....	....	
17, 200	86, 000	. 046750	. 006250	....	....	
17, 600	88, 000	. 055000	. 008250	....	....	
18, 000	90, 000	. 0650	. 0100	....	....	
18, 400	92, 000	. 0950	. 0300	....	....	
18, 480	92, 400	. 1100	. 0150	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section............pounds..	92, 400
Elastic limit per square inch of original section............do....	56, 000
Elongation per inch after rupture............inch...	0. 2100
Elongation per inch under strain at elastic limit............do....	. 001900
Reduction in diameter at point of rupture............do....	. 125
Reduction in area after rupture, per centum of original section............	43. 3
Position of rupture............	". 75 from neck
Character of broken surface............	granular, 60 per centum; silky, 40 per centum
Elongation of inch sections............	".11, ".31*

No. 2207.

Marks, 32 T, M T.
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	emarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001200	.000200	0.	....	
8,000	40,000	.001300	.000100	0.	....	
9,000	45,000	.001500	.000200	0.	....	
10,000	50,000	.001650	.000150	0.	....	
10,200	51,000	.001650	0.	....	....	
10,400	52,000	.001700	.000050	....	....	
10,600	53,000	.001750	.000050	....	....	
10,800	54,000	.001800	.000050	....	....	
11,000	55,000	.001850	.000050	....	....	Elastic limit.
11,200	56,000	.002000	.000150	....	....	
11,400	57,000	.002150	.000150	....	....	
11,600	58,000	.002900	.000750	....	....	
11,800	59,000	.004350	.001450	....	....	
12,000	60,000	.006800	.002450	....	....	
12,200	61,000	.008250	.001450	....	....	
12,400	62,000	.009350	.001100	....	....	
12,600	63,000	.010500	.001150	....	....	
12,800	64,000	.011600	.001100	....	....	
13,000	65,000	.013000	.001400	....	....	
13,200	66,000	.014250	.001250	....	....	
13,400	67,000	.015500	.001250	....	....	
13,600	68,000	.016500	.001000	....	....	
13,800	69,000	.017800	.001300	....	....	
14,000	70,000	.019150	.001350	....	....	
14,400	72,000	.021750	.002600	....	....	
14,800	74,000	.024500	.002750	....	....	
15,200	76,000	.028100	.003600	....	....	
15,600	78,000	.032500	.004400	....	....	
16,000	80,000	.036750	.004250	....	....	
16,400	82,000	.042000	.005250	....	....	
16,800	84,000	.048000	.006000	....	....	
17,200	86,000	.055000	.007000	....	....	
17,600	88,000	.0650	.0100	....	....	
18,000	90,000	.0900	.0250	....	....	
18,020	90,100	.1150	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	90,100
Elastic limit per square inch of original section	do....	55,000
Reduction in diameter after rupture	inch..	0.2150
Elongation per inch under strain at elastic limit	do....	.001850
Elongation per inch after rupture at point of rupture	do ...	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		".95 from neck
Character of broken surface		silky
Elongation of inch sections		".11, ".32

No. 1176.

Marks, $\genfrac{}{}{0pt}{}{32\ T_{10}}{B\ T_{1}}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000250	.000100	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000550	.000150	0.	....	
5, 000	25, 000	.000700	.000150	0.	....	
6, 000	30, 000	.000900	.000200	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001200	.000150	0.	....	
9, 000	45, 000	.001400	.000200	0.	....	
10, 000	50, 000	.001550 .003050	.000150 .001500	.000050	.000050	Elastic limit.
10, 200	51, 000	.007100	.004050	....	....	
10, 400	52, 000	.007350	.000250	....	....	
10, 600	53, 000	.008000	.000650	....	....	
10, 800	54, 000	.008900	.000900	....	....	
11, 000	55, 000	.010350	.001450	.008300	.008250	
11, 200	56, 000	.010850	.000500	....	....	
11, 400	57, 000	.011800	.000950	....	....	
11, 600	58, 000	.013100	.001300	....	....	
11, 800	59, 000	.014250	.001150	....	....	
12, 000	60, 000	.015350	.001100	.012850	.004550	
12, 400	62, 000	.017650	.002300	....	....	
12, 800	64, 000	.020100	.002450	....	....	
13, 200	66, 000	.022800	.002700	....	....	
13, 600	68, 000	.026050	.003250	....	....	
14, 000	70, 000	.029250	.003200	....	....	
14, 400	72, 000	.032550	.003300	....	....	
14, 800	74, 000	.036950	.004400	....	....	
15, 200	76, 000	.041500	.004550	....	....	
15, 600	78, 000	.047250	.005750	....	....	
16, 000	80, 000	.055000	.007750	....	....	
16, 400	82, 000	.064500	.009500	....	....	
16, 800	84, 000	.079000	.014500	....	....	
17, 200	86, 000	.105000	.026000	....	....	
17, 260	86, 300	.1600	.0550	....	....	Tensile strength.

General summary.

Specific gravity		7.8707
Tensile strength per square inch of original section	pounds	86, 300
Elastic limit per square inch of original section	do	50, 000
Elongation per inch after rupture	inch	0.2700
Elongation per inch under strain at elastic limit	do	.001550
Reduction in diameter at point of rupture	do	.144
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		⅜ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.38*, ″.16

No. 1177.

Marks, $^{32\ T_{10}}_{B\ T_2}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load
1,000	5,000	.000200	.000200	0.	....	
2,000	10,000	.000450	.000250	0.	....	
3,000	15,000	.000600	.000150	0.	....	
4,000	20,000	.000800	.000200	.000050	.000050	
5,000	25,000	.001000	.000200	.000050	0.	
6,000	30,000	.001150	.000150	.000050	0.	
7,000	35,000	.001350	.000200	.000100	.000050	
8,000	40,000	.001550	.000200	.000100	0.	
9,000	45,000	.001700	.000150	.000150	.000050	
10,000	50,000	.001850 .002800	.000150 .000950	.000200 .001150	.000050 .000950	Elastic limit.
10,200	51,000	.003450	.000650	....	....	
10,400	52,000	.007000	.003550	....	....	
10,600	53,000	.007900	.000900	....	....	
10,800	54,000	.008900	.001000	....	....	
11,000	55,000	.009650	.000750	.007400	.006250	
11,200	56,000	.010650	.001000	....	....	
11,400	57,000	.011150	.000500	....	....	
11,600	58,000	.012250	.001100	....	....	
11,800	59,000	.013250	.001000	....	....	
12,000	60,000	.014600	.001350	.012100	.004700	
12,400	62,000	.016800	.002200	....	....	
12,800	64,000	.019150	.002350	....	....	
13,200	66,000	.022050	.002900	....	....	
13,600	68,000	.024800	.002750	....	....	
14,000	70,000	.028100	.003300	....	....	
14,400	72,000	.031350	.003250	....	....	
14,800	74,000	.035150	.003800	....	....	
15,200	76,000	.040850	.005700	....	....	
15,600	78,000	.045600	.004750	....	....	
16,000	80,000	.051300	.005700	....	....	
16,400	82,000	.060000	.008700	....	....	
16,800	84,000	.071500	.011500	....	....	
17,200	86,000	.094000	.022500	....	....	
17,510	87,550	.1350	.0410	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	**pounds..**	**87,550**
Elastic limit per square inch of original section	**do ...**	**50,000**
Elongation per inch after rupture	**inch..**	**0.2350**
Elongation per inch under strain at elastic limit	**do....**	**.001850**
Reduction in diameter at point of rupture	**do....**	**.104**
Reduction in area after rupture, per centum of original section		**37.1**
Position of rupture		**″.40 from neck**
Character of broken surface		**silky**
Elongation of inch sections		**″.31*, ″.16**

No. 564.

Marks, $^{32}_{B}{}^{T_{10}}_{T_3}$.
Length, 3″.996.
Diameter, ″.798.
Sectional area, .20 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000400	.000150	0.	....	
10,000	20,000	.000550	.000150	0.	....	
12,500	25,000	.000650	.000100	0.	....	
15,000	30,000	.000850	.000200	0.	....	
17,500	35,000	.001000	.000150	0.	....	
20,000	40,000	.001150	.000150	0.	....	
22,500	45,000	.001300	.000150	0.	....	
25,000	50,000	.001450	.000150	0.	....	Elastic limit.
25,500	51,000	.008150	.006700	....	....	
26,000	52,000	.009050	.000900	....	....	
26,500	53,000	.009700	.000650	....	....	
27,000	54,000	.010400	.000700	....	....	
27,500	55,000	.011250	.000850	.009250	.009250	
45,100	90,200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	50,000
Compression per inch under stress at elastic limit	inch..	0.001450
Ultimate strength per square inch of original section	pounds..	90,200
Manner of failure		triple flexure

No. 1178.

Marks, $^{32\,T_{10}}_{M\,T_1}$,
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000200	.000200	0.	....	
2, 000	10, 000	.000400	.000200	0.	....	
3, 000	15, 600	.000550	.000150	0.	....	
4, 000	20, 000	.000700	.000150	0.	....	
5, 000	25, 000	.000900	.000200	0.	....	
6, 000	30, 000	.001050	.000150	0.	....	
7, 000	35, 000	.001200	.000150	0.	....	
8, 000	40, 000	.001350	.000150	.000050	.000050	
9, 000	45, 000	.001450	.000100	....	....	
9, 800	49, 000	.001550	.000100	....	....	Elastic limit.
10, 000	50, 000	.002750	.001200	.001150	.001100	
10, 200	51, 000	.003250	.000500	....	....	
10, 400	52, 000	.005600	.002350	....	....	
10, 600	53, 000	.007000	.001400	....	....	
10, 800	54, 000	.008000	.001000	....	....	
11, 000	55, 000	.008600	.000600	.006600	.005450	
11, 200	56, 000	.009450	.000850	....	....	
11, 400	57, 000	.010150	.000700	....	....	
11, 600	58, 000	.011300	.001150	....	....	
11, 800	59, 000	.012300	.001000	....	....	
12, 000	60, 000	.013300	.001000	.010950	.004350	
12, 400	62, 000	.015850	.002550	....	....	
12, 800	64, 000	.018200	.002350	....	....	
13, 200	66, 000	.020750	.002550	....	....	
13, 600	68, 000	.023250	.002500	....	....	
14, 000	70, 000	.026050	.002800	....	....	
14, 400	72, 000	.029250	.003200	....	....	
14, 800	74, 000	.032900	.003650	....	....	
15, 200	76, 000	.036900	.004000	....	....	
15, 600	78, 000	.041250	.004350	....	....	
16, 000	80, 000	.047650	.006400	....	....	
16, 400	82, 000	.054750	.007100	....	....	
16, 800	81, 000	.064700	.009950	....	....	
17, 200	86, 000	.078500	.013800	....	....	
17, 500	87, 500	.1200	.0415	....	....	Tensile strength.

General summary.

Tensile strength, per square inch of original section	pounds..	87, 500
Elastic limit per square inch of original section	do ...	49, 000
Elongation per inch after rupture	inch..	0. 2000
Elongation per inch under strain at elastic limit	do....	001550
Reduction in diameter at point of rupture	do....	.144
Reduction in area after rupture, per centum of original section		49. 1
Position of rupture		½ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.32*, ″.08

No. 1179.

Marks, $\genfrac{}{}{0pt}{}{32\ T_{10}}{M\ T_{2}}$
Diameter, ".504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000250	.000100	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000550	.000150	0.	....	
5, 000	25, 000	.000750	.000200	0.	....	
6, 000	30, 000	.000900	.000150	0.	....	
7, 000	35, 000	.001050	.000150	.000050	.000030	
8, 000	40, 000	.001200	.000150	.000050	0.	
9, 000	45, 000	.001350	.000150	.000050	0.	
10, 000	50, 000	.001550	.000200	.000100	.000050	Elastic limit.
10, 200	51, 000	.002350	.000800	....	....	
10, 400	52, 000	.003000	.000650	....	....	
10, 600	53, 000	.003750	.000750	....	....	
10, 800	54, 000	.004650	.000900	....	....	
11, 000	55, 000	.005650	.001000	.003800	.003700	
11, 200	56, 000	.006000	.000350	....	....	
11, 400	57, 000	.006950	.000950	....	....	
11, 600	58, 000	.008450	.001500	....	....	
11, 800	59, 000	.009900	.001450	....	....	
12, 000	60, 000	.013100	.003200	....	....	
12, 400	62, 000	.014350	.001250	....	....	
12, 800	64, 000	.015850	.001500	....	....	
13, 200	66, 000	.018250	.002400	....	....	
13, 600	68, 000	.020850	.002600	....	....	
14, 000	70, 000	.023600	.002750	....	....	
14, 400	72, 000	.027500	.003900	....	....	
14, 800	74, 000	.029750	.002250	....	....	
15, 200	76, 000	.033550	.003800	....	....	
15, 600	78, 000	.038000	.004450	....	....	
16, 000	80, 000	.042850	.004850	....	....	
16, 400	82, 000	.048900	.006050	....	....	
16, 800	84, 000	.056800	.007900	....	....	
17, 200	86, 000	.067500	.010700	....	....	
17, 600	88, 000	.086750	.019250	....	....	
17, 810	89, 050	.1250	.038250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	89, 059
Elastic limit per square inch of original section	do	50, 000
Elongation per inch after rupture	inch	0. 2000
Elongation per inch under strain at elastic limit	do	.001550
Reduction in diameter at point of rupture	do	.134
Reduction in area after rupture, per centum of original section		46. 2
Position of rupture		". 40 from neck
Character of broken surface		silky
Elongation of inch sections		". 30*, ". 10

No. 1663.

Marks, $^{32}\mathrm{T}_{11}$ $\mathrm{_{B}T_{1}}$

Diameter, ".505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000500	.000150	0.	....	
4,000	20,000	.000700	.000200	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.001000	.000150	0.	....	
7,000	35,000	.001200	.000200	0.	....	
8,000	40,000	.001350	.000150	0.	....	
9,000	45,000	.001500	.000150	.000050	.000050	
9,200	46,000	.001500	0.	....	....	
9,400	47,000	.001550	.000050	....	....	
9,600	48,000	.001600	.000050	....	....	
9,800	49,000	.001700	.000100	....	....	Elastic limit.
10,000	50,000	.002850	.001150	.001200	.001150	
10,200	51,000	.003900	.001050	....	....	
10,400	52,000	.004850	.000950	....	....	
10,600	53,000	.005750	.000900	....	....	
10,800	54,000	.007000	.001250	....	....	
11,000	55,000	.007850	.000850	.005850	.004650	
11,200	56,000	.008350	.000500	....	....	
11,400	57,000	.009100	.000750	....	....	
11,600	58,000	.010350	.001250	....	....	
11,800	59,000	.011150	.000800	....	....	
12,000	60,000	.012350	.001200	.010050	.004200	
12,400	62,000	.014100	.001750	....	....	
12,800	64,000	.016000	.001900	....	....	
13,200	66,000	.018600	.002600	....	....	
13,600	68,000	.021000	.002400	....	....	
14,000	70,000	.023500	.002500	....	....	
14,400	72,000	.026250	.002750	....	....	
14,800	74,000	.029500	.003250	....	....	
15,200	76,000	.032700	.003200	....	....	
15,600	78,000	.036200	.003500	....	....	
16,000	80,000	.040850	.004650	....	....	
16,400	82,000	.046000	.005150	....	....	
16,800	84,000	.052300	.006300	....	....	
17,200	86,000	.060250	.007950	....	....	
17,600	88,000	.071500	.011250	....	....	
18,000	90,000	.096000	.024500	....	....	
18,110	90,550	.1200	.0240	....	....	Tensile strength.

General summary.

Specific gravity		7.8657
Tensile strength per square inch of original section	pounds..	90,550
Elastic limit per square inch of original section	do....	49,000
Elongation per inch after rupture	inch..	0.2150
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.145
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		".75 from neck
Character of broken surface		silky
Elongation of inch sections		".32*, ".11

No. 1664.

Marks, $\begin{smallmatrix}32 & T_{1}r \\ P & T_{2}\end{smallmatrix}$

Diameter, ″.505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000250	.000100	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000550	.000150	0.	....	
5, 000	25, 000	.000700	.000150	0.	....	
6, 000	30, 000	.000850	.000150	0.	....	
7, 000	35, 000	.001050	.000200	0.	....	
8, 000	40, 000	.001200	.000150	0.	....	
9, 000	45, 000	.001350	.000150	0.	....	
9, 200	46, 000	.001350	0.	....	....	
9, 400	47, 000	.001400	.000050	....	....	
9, 600	48, 000	.001450	.000050	....	....	
9, 800	49, 000	.001500	.000050	....	....	
10, 000	50, 000	.001550	.000050	0.	....	
10, 200	51, 000	.001650	.000100	....	....	Elastic limit.
10, 400	52, 000	.001900	.000250	....	....	
10, 600	53, 000	.002300	.000400	....	....	
10, 800	54, 000	.002900	.000600	....	....	
11, 000	55, 000	.003700	.000800	.001850	.001850	
11, 200	56, 000	.005150	.001450	....	....	
11, 400	57, 000	.005850	.000700	....	....	
11, 600	58, 000	.007050	.001200	....	....	
11, 800	59, 000	.008250	.001200	....	....	
12, 000	60, 000	.009450	.001200	.007200	.005350	
12, 400	62, 000	.010850	.001400	....	....	
12, 800	64, 000	.013100	.002250	....	....	
13, 200	66, 000	.015250	.002150	....	....	
13, 600	68, 000	.017700	.002450	....	....	
14, 000	70, 000	.020100	.002400	....	....	
14, 400	72, 000	.022450	.002350	....	....	
14, 800	74, 000	.025500	.003050	....	....	
15, 200	76, 000	.028350	.002850	....	....	
15, 600	78, 000	.031600	.003250	....	....	
16, 000	80, 000	.035500	.003900	....	....	
16, 400	82, 000	.040000	.004500	....	....	
16, 800	84, 000	.045050	.005050	....	....	
17, 200	86, 000	.051750	.006700	....	....	
17, 600	88, 000	.060000	.008250	....	....	
18, 000	90, 000	.072250	.012250	....	....	
18, 400	92, 000	.1000	.027750	....	....	
18, 480	92, 400	.1350	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	92, 400
Elastic limit per square inch of original section..........do....	51, 000
Elongation per inch after rupture..........inch..	0. 2500
Elongation per inch under strain at elastic limit..........do...	.001650
Reduction in diameter at point of rupture..........do...	.145
Reduction in area after rupture, per centum of original section..........	49. 1
Position of rupture..........	″.55 from neck
Character of broken surface..........	silky, traces of granulation
Elongation of inch sections..........	″.33*, ″.17

No. 570.

Marks, $\frac{32\ T_{11}}{B\ T_{3}}$
Length, 4″.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000550	.000150	0.	....	
12, 500	25, 000	.000750	.000200	0.	....	
15, 000	30, 000	.000850	.000100	0.	....	
17, 500	35, 000	.001000	.000150	0.	....	
20, 000	40, 000	.001150	.000150	0.	....	
22, 500	45, 000	.001350	.000200	0.	....	
24, 000	48, 000	.001400	.000050	....	....	
24, 500	49, 000	.001450	.000050	....	....	
25, 000	50, 000	.001450	0.	.000100	.000100	Elastic limit.
25, 500	51, 000	.002000	.000550	....	....	
26, 000	52, 000	.002800	.000800	....	....	
26, 500	53, 000	.004050	.001250	....	....	
27, 000	54, 000	.005250	.001200	....	....	
27, 500	55, 000	.006350	.001100	.004400	.004300	
48, 300	96, 600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	50, 000
Compression per inch under stress at elastic limit	inch..	0. 001600
Ultimate strength per square inch of original section	pounds..	96, 600
Manner of failure		triple flexure

No. 1665.

Marks, $^{32\,T_{11}}_{M\,T_{1}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000550	.000200	0.	....	
4,000	20,000	.000700	.000150	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.001000	.000150	0.	....	
7,000	35,000	.001200	.000200	0.	....	
8,000	40,000	.001350	.000150	0.	....	
9,000	45,000	.001500	.000150	.000050	.000050	
9,200	46,000	.001500	0.	....	....	
9,400	47,000	.001550	.000050	....	....	
9,600	48,000	.001600	.000050	....	....	
9,800	49,000	.001650	.000050	....	....	
10,000	50,000	.001650	0.	.000050	0.	Elastic limit.
10,200	51,000	.001950	.000300	....	....	
10,400	52,000	.002250	.000300	....	....	
10,600	53,000	.002750	.000500	....	....	
10,800	54,000	.003400	.000650	....	....	
11,000	55,000	.004150	.000750	.002200	.002150	
12,200	56,000	.004900	.000750	....	....	
11,400	57,000	.006100	.001200	....	....	
11,600	58,000	.007200	.001100	....	....	
11,800	59,000	.008200	.001000	....	....	
12,000	60,000	.009250	.001050	.007050	.004850	
12,400	62,000	.011100	.001850	....	....	
12,800	64,000	.013100	.002000	....	....	
13,200	66,000	.015550	.002450	....	....	
13,600	68,000	.017700	.002150	....	....	
14,000	70,000	.020000	.002300	....	....	
14,400	72,000	.022450	.002450	....	....	
14,800	74,000	.025400	.002950	....	....	
15,200	76,000	.027900	.002500	....	....	
15,600	78,000	.031250	.003350	....	....	
16,000	80,000	.034600	.003350	....	....	
16,400	82,000	.039250	.004650	....	....	
16,800	84,000	.044850	.005600	....	....	
17,200	86,000	.050600	.005750	....	....	
17,600	88,000	.058900	.008300	....	....	
18,000	90,000	.072000	.013100	....	....	
18,400	92,000	.095000	.023000	....	....	
18,490	92,450	.1200	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	92,450
Elastic limit per square inch of original section	do....	50,000
Elongation per inch after rupture	inch..	0.2050
Elongation per inch under strain at elastic limit	do....	.001650
Reduction in diameter at point of rupture	do....	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		¼ inch from neck
Character of broken surface		silky; traces of granulation
Elongation of inch sections		″.30*, ″.11

No. 1666.

Marks, $\frac{32}{M}\frac{T_{11}}{T_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000600	.000200	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000950	.000200	0.	....	
7, 000	35, 000	.001100	.000150	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001400	.000150	.000050	.000050	
9, 200	46, 000	.001450	.000050	....	....	
9, 400	47, 000	.001550	.000100	....	....	
9, 600	48, 000	.001550	0.	....	....	
9, 800	49, 000	.001600	.000050	....	....	
10, 000	50, 000	.001650	.000050	.000100	.000050	
10, 200	51, 000	.001650	0.	....	....	
10, 400	52, 000	.001700	.000050	....	....	
10, 600	53, 000	.001750	.000050	....	....	
10, 800	54, 000	.001850	.000100	....	....	
11, 000	55, 000	.001900	.000050	.000150	.000050	Elastic limit.
11, 200	56, 000	.002600	.000700	....	....	
11, 400	57, 000	.003900	.001300	....	....	
11, 600	58, 000	.005000	.001100	....	....	
11, 800	59, 000	.006450	.001450	....	....	
12, 000	60, 000	.007850	.001400	.005700	.005550	
12, 400	62, 000	.009700	.001850	....	....	
12, 800	64, 000	.011850	.002150	....	....	
13, 200	66, 000	.014600	.002750	....	....	
13, 600	68, 000	.016750	.002150	....	....	
14, 000	70, 000	.019100	.002350	....	....	
14, 400	72, 000	.022050	.002950	....	....	
14, 800	74, 000	.024750	.002700	....	....	
15, 200	76, 000	.027400	.002650	....	....	
15, 600	78, 000	.030650	.003250	....	....	
16, 000	80, 000	.034600	.003950	....	....	
16, 400	82, 000	.039300	.004700	....	....	
16, 800	84, 000	.044150	.004850	....	....	
17, 200	86, 000	.050600	.006450	....	....	
17, 600	88, 000	.060000	.009400	....	....	
18, 000	90, 000	.073750	.013750	....	....	
18, 390	91, 950	.1200	.046250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	91, 950
Elastic limit per square inch of original section	do ...	55, 000
Elongation per inch after rupture	inch..	0. 2150
Elongation per inch under strain at elastic limit	do....	.001900
Reduction in diameter at point of rupture	do....	.135
Reduction in area after rupture, per centum of original section		46. 2
Position of rupture		″.45 from neck
Character of broken surface		silky
Elongation of inch sections		″.32*, ″.11

No. 1163.

Marks, $\overset{32}{B}\,\overset{T_{13}}{T_1}$.
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000350	.000250	0.	....	
3, 000	15, 000	.000500	.000150	0.	....	
4, 000	20, 000	.000650	.000150	0.	....	
5, 000	25, 000	.000850	.000200	0.	....	
6, 000	30, 000	.001000	.000150	0.	....	
7, 000	35, 000	.001150	.000150	0.	....	
8, 000	40, 000	.001250	.000100	0.	....	
9, 000	45, 000	.001400	.000150	0.	....	
10, 000	50, 000	.001550	.000150	0.	....	
10, 800	54, 000	.001650	.000100	......	....	Elastic limit.
11, 000	55, 000	.003600	.001950	.001850	.001850	
11, 200	56, 000	.005300	.001700	....	....	
11, 400	57, 000	.005650	.000350	....	....	
11, 600	58, 000	.007700	.002050	....	....	
11, 800	59, 000	.009000	.001300	....	....	
12, 000	60, 000	.010150	.001150	.007950	.006100	
12, 400	62, 000	.011900	.001750	....	....	
12, 800	64, 000	.013450	.001550	....	....	
13, 200	66, 000	.015850	.001400	....	....	
13, 600	68, 000	.019000	.003150	....	....	
14, 000	70, 000	.021000	.002000	....	....	
14, 400	72, 000	.023500	.002500	....	....	
14, 800	74, 000	.026250	.002750	....	....	
15, 200	76, 000	.029500	.003250	....	....	
15, 600	78, 000	.033100	.003600	....	....	
16, 000	80, 000	.037000	.003900	....	....	
16, 400	82, 000	.041550	.004550	....	....	
16, 800	84, 000	.046650	.005100	....	....	
17, 200	86, 000	.053500	.006850	....	....	
17, 600	88, 000	.067000	.013500	....	....	
18, 000	90, 000	.080600	.013600	....	....	
18, 400	92, 000	.1100	.0296	....	....	
18, 450	92, 250	....	....	....	....	Tensile strength.

General summary.

Specific gravity		7. 8654
Tensile strength per square inch of original section	pounds..	92, 250
Elastic limit per square inch of original section	do ...	54, 000
Elongation per inch after rupture	inch..	0. 2050
Elongation per inch under strain at elastic limit	do ...	.001650
Reduction in diameter at point of rupture	do ...	.125
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		″-40 from neck
Character of broken surface		silky
Elongation of inch sections		″.30*, ″.11

No. 1164.

Marks, $\substack{32\ T_{12} \\ B\ T_{2}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000300	.000100	0.	....	
4,000	20,000	.000500	.000200	0.	....	
5,000	25,000	.000700	.000200	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001000	.000150	0.	....	
8,000	40,000	.001100	.000100	0.	....	
9,000	45,000	.001350	.000250	0.	....	
10,000	50,000	.001450	.000100	0.	....	
10,200	51,000	.001450	0.	....	....	
10,400	52,000	.001500	.000050	....	....	
10,600	53,000	.001500	0.	....	....	
10,800	54,000	.001550	.000050	....	....	Elastic limit.
11,000	55,000	.008800	.007250	.006700	.006700	
11,200	56,000	.009600	.000800	....	....	
11,400	57,000	.010050	.000450	....	....	
11,600	58,000	.010500	.000450	....	....	
11,800	59,000	.011600	.001100	....	....	
12,000	60,000	.012700	.001100	.010350	.003650	Rested one hour under initial load.
12,400	62,000	.015400	.002700	....	....	
12,800	64,000	.017000	.001600	....	....	
13,200	66,000	.019500	.002500	....	....	
13,600	68,000	.022050	.002550	....	....	
14,000	70,000	.025050	.003000	....	....	
14,400	72,000	.028000	.002950	....	....	
14,800	74,000	.031200	.003200	....	....	
15,200	76,000	.035300	.004100	....	....	
15,600	78,000	.039800	.004500	....	....	
16,000	80,000	.045600	.005800	....	....	
16,400	82,000	.052600	.007000	....	....	
16,800	84,000	.060500	.007900	....	....	
17,200	86,000	.076100	.005600	....	....	
17,600	88,000	.0950	.0189	....	....	
17,810	89,050	.1400	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	89,050
Elastic limit per square inch of original section	do....	54,000
Elongation per inch after rupture	inch..	0.2250
Elongation per inch under strain at elastic limit	do....	.001550
Reduction in diameter at point of rupture	do....	.145
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		″.60 from neck
Character of broken surface		silky
Elongation of inch sections		″.32, ″.13

No. 562.

Marks, $\genfrac{}{}{0pt}{}{32\,T_{12}}{B\,T_{3}}$
Length, 3''.98.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000400	.000150	0.	....	
10,000	20,000	.000550	.000150	0.	....	
12,500	25,000	.000700	.000150	0.	....	
15,000	30,000	.000830	.000150	0.	....	
17,500	35,000	.001000	.000150	0.	....	
20,000	40,000	.001200	.000200	0.	....	
22,500	45,000	.001350	.000150	0.	....	
25,000	50,000	.001500	.000150	0.	....	
25,500	51,000	.001500	0.	....	....	
26,000	52,000	.001550	.000050	....	....	
26,500	53,000	.001600	.000050	....	....	
27,000	54,000	.001650	.000050	....	....	
27,500	55,000	.001700	.000050	0.	....	
28,000	56,000	.001750	.000050	....	....	
28,500	57,000	.001800	.000050	....	....	Elastic limit.
29,000	58,000	.009400	.007600	....	....	
29,500	59,000	.010650	.001250	....	....	
30,000	60,000	.011500	.000850	.009200	.009200	
47,860	95,720	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section..pounds.. 57,000
Compression per inch under stress at elastic limit..inch.. 0.001800
Ultimate strength per square inch of original section..pounds.. 95,720
Manner of failure..triple flexure

No. 1165.

Marks, $\frac{32\ T_{18}}{M\ T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000600	.000200	0.	....	
5, 000	25, 000	.000700	.000100	0.	....	
6, 000	30, 000	.000900	.000200	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001200	.000150	0.	....	
9, 000	45, 000	.001400	.000200	0.	....	
10, 000	50, 000	.001600	.000200	.000050	.000050	
10, 200	51, 000	.001650	.000050	....	....	
10, 400	52, 000	.001700	.000050	....	....	Elastic limit.
10, 600	53, 000	.003700	.002000	....	....	
10, 800	54, 000	.005300	.001600	....	....	
11, 000	55, 000	.007000	.001700	.004850	.004800	
11, 200	56, 000	.007400	.000400	....	....	
11, 400	57, 000	.008150	.000750	....	....	
11, 600	58, 000	.008950	.000800	....	....	
11, 800	59, 000	.010150	.001200	....	....	
12, 000	60, 000	.010900	.000750	.008700	.003850	
12, 400	62, 000	.013450	002550	....	....	
12, 800	64, 000	.015500	.002050	....	....	
13, 200	66, 000	.017750	.002250	....	....	
13, 600	68, 000	.020150	.002400	....	....	
14, 000	70, 000	.023050	.002900	....	....	
14, 400	72, 000	.026050	.003000	....	....	
14, 800	74, 000	.028500	.002450	....	....	
15, 200	76, 000	.032000	.003500	....	....	
15, 600	78, 000	.036150	.004150	....	....	
16, 000	80, 000	.040600	.004450	....	....	
16, 400	82, 000	.045150	.004550	....	....	
16, 800	84, 000	.052050	.006900	....	....	
17, 200	86, 000	.060300	.008250	....	....	
17, 600	88, 000	.072600	.012300	....	....	
18, 000	90, 000	.098500	.025900	....	....	
18, 080	90, 400	.1500	.0515	....	....	Tensile strength.

General summary.

Specific gravity		7. 8601
Tensile strength per square inch of original section	pounds..	90, 400
Elastic limit per square inch of original section	do....	52, 000
Elongation per inch after rupture	inch..	0. 2250
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.115
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		″.55 from neck
Character of broken surface		silky, 90 per centum; granular, 10 per centum
Elongation of inch sections		″.32*, ″.13

No. 1166.

Marks, $\frac{32\ T_{12}}{M\ T_{2}}$

Diameter, ″.505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000800	.000200	0.	....	
6, 000	30, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001100	.000150	0.	....	
8, 000	40, 000	.001250	.000150	.000050	.000050	
9, 000	45, 000	.001400	.000150	.000050	0.	
10, 000	50, 000	.001550	.000150	.000050	0.	
10, 200	51, 000	.001600	.000050	....	....	
10, 400	52, 000	.001650	.000050	....	....	
10, 600	53, 000	.001700	.000050	....	....	Elastic limit.
10, 800	54, 000	.005100	.003400	....	....	
11, 000	55, 000	.007300	.002200	.005250	.005200	
11, 200	56, 000	.007900	.000600	....	....	
11, 400	57, 000	.008750	.000850	....	....	
11, 600	58, 000	.009750	.001000	....	....	
11, 800	59, 000	.010700	.000950	....	....	
12, 000	60, 000	.011750	.001050	.009500	.004250	
12, 400	62, 000	.014150	.002400	....	....	
12, 800	64, 000	.016050	.001900	....	....	
13, 200	66, 000	.018600	.002550	....	....	
13, 600	68, 000	.021100	.002500	....	....	
14, 000	70, 000	.023750	.002650	....	....	
14, 400	72, 000	.026750	.003000	....	....	
14, 800	74, 000	.029700	.002950	....	....	
15, 200	76, 000	.033600	.003900	....	....	
15, 600	78, 000	.037800	.004200	....	....	
16, 000	80, 000	.042250	.004450	....	....	
16, 400	82, 000	.048350	.006100	....	....	
16, 800	84, 000	.056250	.007900	....	....	
17, 200	86, 000	.066000	.009750	....	....	
17, 600	88, 000	.083250	.017250	....	....	
17, 880	89, 400	.1175	.034250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	89, 400
Elastic limit per square inch of original section	do....	53, 000
Elongation per inch after rupture	inch..	0. 1900
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.115
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		″.55 from neck
Character of broken surface		silky
Elongation of inch sections		″.28*, ″.10

No. 1167.

Marks, $^{32\,T_{13}}_{B\,T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000400	.000200	0.	....	
4,000	20,000	.000600	.000200	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001200	.000250	0.	....	
8,000	40,000	.001300	.000100	0.	....	
9,000	45,000	.001400	.000100	0.	....	
10,000	50,000	.001650	.000250	.000100	.000100	
10,200	51,000	.001650	0.	....	....	
10,400	52,000	.001700	.000050	....	....	
10,600	53,000	.001800	.000100	....	....	Elastic limit.
10,800	54,000	.003200	.001400	....	....	
11,000	55,000	.004500	.001300	.002500	.002400	
11,200	56,000	.005700	.001200	....	....	
11,400	57,000	.006350	.000650	....	....	
11,600	58,000	.007200	.000850	....	....	
11,800	59,000	.008250	.001050	....	....	
12,000	60,000	.009350	.001100	.007150	.004650	
12,400	62,000	.011200	.001850	....	....	
12,800	64,000	.013300	.002100	....	....	
13,200	66,000	.015600	.002300	....	....	
13,600	68,000	.017750	.002150	....	....	
14,000	70,000	.020100	.002350	....	....	
14,400	72,000	.022700	.002600	....	....	
14,800	74,000	.025100	.002400	....	....	
15,200	76,000	.028050	.002950	....	....	
15,600	78,000	.031750	.003700	....	....	
16,000	80,000	.035400	.003650	....	....	
16,400	82,000	.039550	.004150	....	....	
16,800	84,000	.044500	.004950	....	....	
17,200	86,000	.050600	.006100	....	....	
17,600	88,000	.058750	.008150	....	....	
18,000	90,000	.072000	.013250	....	....	
18,390	91,950	.1100	.0380	....	....	Tensile strength.

General summary.

Specific gravity	7.8634
Tensile strength per square inch of original section ....pounds..	91,950
Elastic limit per square inch of original section ....do....	53,000
Elongation per inch after rupture ....inch..	0.1950
Elongation per inch under strain at elastic limit ....do....	.001800
Reduction in diameter at point of rupture ....do....	.135
Reduction in area after rupture, per centum of original section	46.2
Position of rupture	″.35 from middle of stem
Character of broken surface	silky
Elongation of inch sections	″.30*, ″.09

No. 1168.

Marks, $\begin{matrix}32 & T_{13}\\ B & T_{2}\end{matrix}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2 000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000600	.000100	0.	....	
5,000	25,000	.000850	.000250	0.	....	
6,000	30,000	.001050	.000200	.000050	.000050	
7,000	35,000	.001200	.000150	.000050	0.	
8,000	40,000	.001350	.000150	.000050	0.	
9,000	45,000	.001450	.000100	.000050	0.	
10,000	50,000	.001600	.000150	.000050	0.	
10,200	51,000	.001650	.000050	....	....	
10,400	52,000	.001750	.000100	....	....	
10,600	53,000	.001850	.000100	....	....	Elastic limit.
10,800	54,000	.002400	.000550	....	....	
11,000	55,000	.003650	.001250	.001800	.001750	
11,200	56,000	.005850	.002200	....	....	
11,400	57,000	.006200	.000350	....	....	
11,600	58,000	.007300	.001100	....	....	
11,800	59,000	.008550	.001250	....	....	
12,000	60,000	.009350	.000800	.007100	.005300	
12,400	62,000	.011350	.002000	....	....	
12,800	64,000	.014000	.002650	....	....	
13,200	66,000	.016000	.002000	....	....	
13,600	68,000	.018550	.002550	....	....	
14,000	70,000	.021000	.002450	....	....	
14,400	72,000	.023600	.002600	....	....	
14,800	74,000	.026550	.002950	....	....	
15,200	76,000	.029750	.003200	....	....	
15,600	78,000	.033500	.003750	....	....	
16,000	80,000	.037500	.004000	....	....	
16,400	82,000	.042500	.005000	....	....	
16,800	84,000	.048250	.005750	....	....	
17,200	86,000	.057500	.009250	....	....	
17,600	88,000	.066000	.008500	....	....	
18,000	90,000	.090500	.024500	....	....	
18,060	90,300	.1075	.0170	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	90,300
Elastic limit per square inch of original section	do	53,000
Elongation per inch after rupture	inch	0.1900
Elongation per inch under strain at elastic limit	do	.001850
Reduction in diameter at point of rupture	do	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		″.25 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.26*, ″.12

No. 563.

Marks, $\begin{smallmatrix}32\ T_{13}\\ B\ T_{3}\end{smallmatrix}$
Length, 4″.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000400	.000150	0.	....	
10,000	20,000	.000650	.000250	0.	....	
12,500	25,000	.000800	.000150	0.	....	
15,000	30,000	.000950	.000150	0.	....	
17,500	35,000	.001100	.000150	0.	....	
20,000	40,000	.001250	.000150	0.	....	
22,500	45,000	.000350	.000100	0.	....	
25,000	50,000	.001550	.000200	0.	....	
25,500	51,000	.001550	0.	....	....	
26,000	52,000	.001600	.000050	....	....	
26,500	53,000	.001650	.000050	....	....	
27,000	54,000	.001800	.000150	....	....	
27,500	55,000	.001900	.000100	.000200	.000200	
28,000	56,000	.002000	.000100	....	....	
28,500	57,000	.002050	.000050	....	....	
29,000	58,000	.002150	.000100	....	....	Elastic limit.
29,500	59,000	.002300	.000150	....	....	
30,000	60,000	.002700	.000400	.000800	.000600	
30,500	61,000	.003150	.000450	....	....	
31,000	62,000	.003750	.000600	....	....	
31,500	63,000	.004400	.000650	....	....	
32,000	64,000	.005500	.001100	....	....	
32,500	65,000	.006300	.000800	.004250	.003450	
48,090	96,180	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	58,000
Compression per inch under stress at elastic limit	inch..	0.002150
Ultimate strength per square inch of original section	pounds..	96,180
Manner of failure		triple flexure

No. 1169.

Marks, $\substack{82\ T_{18} \\ M\ T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000850	.000200	0.	....	
6,000	30,000	.001000	.000150	0.	....	
7,000	35,000	.001100	.000100	0.	....	
8,000	40,000	.001300	.000200	0.	....	
9,000	45,000	.001400	.000100	0.	....	
10,000	50,000	.001600	.000200	0.	....	
10,200	51,000	.001650	.000050	....	....	
10,400	52,000	.001700	.000050	....	....	
10,600	53,000	.001800	.000100	....	....	Elastic limit.
10,800	54,000	.002050	.000250	....	....	
11,000	55,000	.002350	.000300	.000600	.000600	
11,200	56,000	.002900	.000550	....	....	
11,400	57,000	.003150	.000250	....	....	
11,600	58,000	.003650	.000500	....	....	
11,800	59,000	.004650	.001000	....	....	
12,000	60,000	.006350	.000700	.004100	.003500	
12,400	62,000	.008500	.002150	....	....	
12,800	64,000	.010450	.001950	....	....	
13,200	66,000	.012500	.002050	....	....	
13,600	68,000	.014500	.002000	....	....	
14,000	70,000	.016750	.002250	....	....	
14,400	72,000	.018750	.002000	....	....	
14,800	74,000	.021200	.002450	....	....	
15,200	76,000	.023400	.002200	....	....	
15,600	78,000	.026900	.003500	....	....	
16,000	80,000	.029500	.002600	....	....	
16,400	82,000	.032900	.003400	....	....	
16,800	84,000	.036400	.003500	....	....	
17,200	86,000	.041000	.004600	....	....	
17,600	88,000	.045750	.004750	....	....	
18,000	90,000	.052050	.006300	....	....	
18,400	92,000	.061500	.009450	....	....	
18,800	94,000	.074500	.013000	....	....	
19,110	95,550	.0950	.0205	....	....	Tensile strength.

General summary.

Specific gravity		7.8590
Tensile strength per square inch of original section	pounds..	95,550
Elastic limit per square inch of original section	do ...	53,000
Elongation per inch after rupture	inch..	0.1850
Elongation per inch under strain at elastic limit	do....	.001800
Reduction in diameter at point of rupture	do....	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		½ inch from neck
Character of broken surface		granular, 50 per centum; silky, 50 per centum
Elongation of inch sections		″.29* ″.08

No. 1170.

Marks, 32 T_{13} M T_7
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	Pounds.	Inch.	Inch.	Inch.	Inch.	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000350	.000250	0.	....	
3, 000	15, 000	.000500	.000150	0.	....	
4, 000	20, 000	.000650	.000150	0.	....	
5, 000	25, 000	.000750	.000100	0.	....	
6, 000	30, 000	.000900	.000150	0.	....	
7, 000	35, 000	.001100	.000200	0.	....	
8, 000	40, 000	.001300	.000200	0.	....	
9, 000	45, 000	.001450	.000150	0.	....	
10, 000	50, 000	.001550	.000100	0.	....	
10, 200	51. 000	.001600	.000050	....	....	
10, 400	52, 000	.001650	.000050	....	....	
10, 600	53. 000	.001650	0.	....	....	
10, 800	54. 000	.001700	.000050	....	....	
11, 000	55, 000	.001750	.000050	0.	....	
11, 200	56, 000	.001800	.000050	....	....	
11, 400	57, 000	.001850	.000050	....	....	
11, 600	58, 000	.001900	.000050	....	....	
11, 800	59, 000	.002000	.000100	....	....	Elastic limit.
12, 000	60, 000	.002550	.000550	.000600	.000600	
12, 200	61, 000	.003150	.000600	....	....	
12, 400	62, 000	.004350	.001200	....	....	
12, 600	63, 000	.005200	.000850	....	....	
12, 800	64, 000	.006500	.001300	....	....	
13, 200	66, 000	.008600	.002100	....	....	
13, 600	68, 000	.011100	.002500	....	....	
14, 000	70, 000	.013000	.001900	....	....	
14, 400	72. 000	.015000	.002000	....	....	
14, 800	74, 000	.016900	.001900	....	....	
15, 200	76, 000	.019500	.002600	....	....	
15, 600	78, 000	.021600	.002100	....	....	
16, 000	80, 000	.024300	.002700	....	....	
16, 400	82, 000	.027400	.003100	....	....	
16, 800	84, 000	.030300	.002900	....	....	
17, 200	86. 000	.033500	.003200	....	....	
17, 600	88. 000	.037500	.004000	....	....	
18, 000	90, 000	.041850	.004350	....	....	
18, 400	92, 000	.047500	.005650	....	....	
18, 800	94, 000	.054600	.007100	....	....	
19, 200	96, 000	.066500	.011900	....	....	
19, 600	98, 000	.086000	.019500	....	....	
19, 680	98, 400	.100500	.014500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98, 400
Elastic limit per square inch of original section	do....	59, 000
Elongation per inch after rupture	inch..	0. 1700
Elongation per inch under strain at elastic limit	do ..	.002000
Reduction in diameter at point of rupture	do....	.115
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		½ inch from neck
Character of broken surface		granular, 60 per centum; silky, 40 per centum
Elongation of inch sections		″.27*, ″.07

[Additional specimens.]

No. 2244.

Marks, $\substack{32\ T_{13} \\ B\ T_4}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000200	.000200	0.	....	
2,000	10,000	.000350	.000150	0.	....	
3,000	15,000	.000550	.000200	0.	....	
4,000	20,000	.000700	.000150	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.001050	.000200	0.	....	
7,000	35,000	.001250	.000200	0.	....	
8,000	40,000	.001450	.000200	0.	....	
9,000	45,000	.001600	.000150	....	....	
9,600	48,000	.001700	.000100	....	....	
9,800	49,000	.001750	.000050	....	....	Elastic limit.
10,000	50,000	.004800	.003050	....	....	
10,200	51,000	.006600	.001800	....	....	
10,400	52,000	.007500	.000900	....	....	
10,600	53,000	.008700	.001200	....	....	
10,800	54,000	.009700	.001000	....	....	
11,000	55,000	.010650	.000950	....	....	
11,200	56,000	.011900	.001250	....	....	
11,400	57,000	.012750	.000850	....	....	
11,600	58,000	.013900	.001150	....	....	
11,800	59,000	.015000	.001100	....	....	
12,000	60,000	.016000	.001000	....	....	
12,400	62,000	.018750	.002750	....	....	
12,800	64,000	.021250	.002500	....	....	
13,200	66,000	.024000	.002750	....	....	
13,600	68,000	.027000	.003000	....	....	
14,000	70,000	.030600	.003600	....	....	
14,400	72,000	.034500	.003900	....	....	
14,800	74,000	.038250	.003750	....	....	
15,200	76,000	.043500	.005250	....	....	
15,600	78,000	.051000	.007500	....	....	
16,000	80,000	.058500	.007500	....	....	
16,400	82,000	.0700	.0115	....	....	
16,800	84,000	.0950	.0250	....	....	
16,970	84,850	.1250	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	84,850
Elastic limit per square inch of original section	do....	49,000
Elongation per inch after rupture	inch..	0.2200
Elongation per inch under strain at elastic limit	do....	.001750
Reduction in diameter at point of rupture	do....	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.34*, ″.10

No. 2245.

Marks, $^{32\ T_{13}}_{B\ T_6}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000650	.000200	0.	....	
5, 000	25, 000	.000850	.000150	0.	....	
6, 000	30, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001150	.000200	0.	....	
8, 000	40, 000	.001350	.000200	0.	....	
9, 000	45, 000	.001500	.000150	0.	....	
10, 000	30, 000	.001700	.000200	0.	....	Elastic limit.
10, 200	51, 000	.003500	.001800	....	....	
10, 400	52, 000	.005250	.001750	....	....	
10, 600	53, 000	.007150	.001900	....	....	
10, 800	54, 000	.008500	.001350	....	....	
11, 000	55, 000	.009750	.001250	....	....	
11, 200	56, 000	.010500	.000750	....	....	
11, 400	57, 000	.011650	.001150	....	....	
11, 600	58, 000	.012100	.000450	....	....	
11, 800	59, 000	.013500	.001400	....	....	
12, 000	60, 000	.015000	.001500	....	....	
12, 400	62, 000	.017250	.002250	....	....	
12, 800	64, 000	.019500	.002250	....	....	
13, 200	66, 000	.022250	.002750	....	....	
13, 600	68, 000	.025150	.002900	....	....	
14, 000	70, 000	.028000	.002850	....	....	
14, 400	72, 000	.031750	.003750	....	....	
14, 800	74, 000	.035250	.003500	....	....	
15, 200	76, 000	.040000	.004750	....	....	
15, 600	78, 000	.045250	.005250	....	....	
16, 000	80, 000	.052100	.006850	....	....	
16, 400	82, 000	.061750	.009650	....	....	
16, 800	84, 000	.0750	.013250	....	....	
17, 200	86, 000	.1100	.0350	....	....	
17, 240	86, 200	.1400	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	86, 200
Elastic limit per square inch of original section	do....	50, 000
Elongation per inch after rupture	inch..	0. 2150
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at joint of rupture	do....	.145
Reduction in area after rupture, per centum of original section		49. 1
Position of rupture		".10 from middle of stem
Character of broken surface		silky
Elongation of inch sections		".30*, ".13

No. 623.

Marks, $^{32\ T_{13}}_{\ B\ T_{6}}$
Length, 3″.991.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000150	.000150	0.	....	
5, 000	10, 000	.000300	.000150	0.	....	
7, 500	15, 000	.000500	.000200	0.	....	
10, 000	20, 000	.000700	.000200	0.	....	
12, 500	25, 000	.000850	.000150	0.	....	
15, 000	30, 000	.001000	.000150	0.	....	
17, 500	35, 000	.001200	.000200	0.	....	
20, 000	40, 000	.001350	.000150	0.	....	
20, 500	41, 000	.001400	.000050	....	....	
21, 000	42, 000	.001500	.000100	....	....	
21, 500	43, 000	.001500	0.	....	....	
22, 000	44, 000	.001500	0.	....	....	
22, 500	45, 000	.001500	0.	0.	....	
23, 000	46, 000	.001550	.000050	....	....	
23, 500	47, 000	.001550	0.	....	....	
24, 000	48, 000	.001600	.000050	....	....	Elastic limit.
24, 500	49, 000	.001700	.000100	....	....	
25, 000	50, 000	.001800	.000100	.000250	.000250	
25, 500	51, 000	.006100	.004300	....	....	
26, 000	52, 000	.007950	.001850	....	....	
26, 500	53, 000	.009850	.001900	....	....	
27, 000	54, 000	.010800	.000950	....	....	
27, 500	55, 000	.011950	.001150	.010000	.009750	
46, 100	92, 200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	48, 000
Compression per inch under stress at elastic limit	inch..	0. 001600
Ultimate strength per square inch of original section	pounds..	92, 200
Manner of failure		triple flexure

No. 2246.

Marks, $\begin{matrix} 32\ T_{13} \\ M\ T_{3} \end{matrix}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001300	.000200	0.	....	
8,200	41,000	.001350	.000050	....	....	
8,400	42,000	.001400	.000050	....	....	
8,600	43,000	.001500	.000100	....	....	Elastic limit.
8,800	44,000	.008500	.007000	....	....	
9,000	45,000	.010000	.001500	....	....	
9,200	46,000	.010900	.000900	....	....	
9,400	47,000	.011650	.000750	....	....	
9,600	48,000	.012650	.001000	....	....	
9,800	49,000	.013150	.000500	....	....	
10,000	50,000	.014500	.001350	....	....	
10,200	51,000	.015650	.001150	....	....	
10,400	52,000	.016700	.001050	....	....	
10,600	53,000	.018100	.001400	....	....	
10,800	54,000	.019050	.000950	....	....	
11,000	55,000	.020590	.001500	....	....	
11,200	56,000	.021640	.001100	....	....	
11,400	57,000	.023500	.002050	....	....	
11,600	58,000	.025250	.001750	....	....	
11,800	59,000	.026500	.001250	....	....	
12,000	60,000	.027650	.001150	....	....	
12,400	62,000	.031100	.003450	....	....	
12,800	64,000	.035250	.004150	....	....	
13,200	06,000	.039750	.004500	....	....	
13,600	68,000	.044250	.004500	....	....	
14,000	70,000	.051500	.007250	....	....	
14,400	72,000	.058000	.006500	....	....	
14,800	74,000	.0650	.0070	....	....	
15,200	76,000	.0850	.0200	....	....	
15,600	78,000	.1050	.0200	....	....	
16,000	80,000	.1550	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	80,000
Elastic limit per square inch of original section	do	43,000
Elongation per inch after rupture	inch	0.2400
Elongation per inch under strain at elastic limit	do	.001500
Reduction in diameter at point of rupture	do	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		½ inch from neck
Character of broken surface		granular, 50 per centum; silky, 50 per centum
Elongation of inch sections		″.33*, ″.15

No. 2247.

Marks, $\overset{32\ T_{13}}{M\ T_{4}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000900	.000150	0.	....	
7, 000	35, 000	.001100	.000200	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
8, 200	41, 000	.001300	.000050	....	....	Elastic limit.
8, 400	42, 000	.004100	.002800	....	....	
8, 600	43, 000	.005350	.001250	....	....	
8, 800	44, 000	.009500	.004150	....	....	
9, 000	45, 000	.010400	.000900	....	....	
9, 200	46, 000	.010850	.000450	....	....	
9, 400	47, 000	.011700	.000850	....	....	
9, 600	48, 000	.012700	.001000	....	....	
9, 800	49, 000	.013750	.001050	....	....	
10, 000	50, 000	.015000	.001250	....	....	
10, 200	51, 000	.015850	.000850	....	....	
10, 400	52, 000	.016500	.000650	....	....	
10, 600	53, 000	.017500	.001000	....	....	
10, 800	54, 000	.019000	.001500	....	....	
11, 000	55, 000	.020150	.001150	....	....	
11, 200	56, 000	.021500	.001350	....	....	
11, 400	57, 000	.022750	.001250	....	....	
11, 600	58, 000	.024250	.001500	....	....	
11, 800	59, 000	.025650	.001400	....	....	
12, 000	60, 000	.027000	.001350	....	....	
12, 400	62, 000	.031100	.004100	....	....	
12, 800	64, 000	.034500	.003400	....	....	
13, 200	66, 000	.038750	.004250	....	....	
13, 600	68, 000	.045000	.006250	....	....	
14, 000	70, 000	.051000	.006000	....	....	
14, 400	72, 000	.057750	.006750	....	....	
14, 800	74, 000	.066500	.008750	....	....	
15, 200	76, 000	.0800	.0135	....	....	
15, 600	78, 000	.1100	.0300	....	....	
15, 960	79, 800	.1450	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	79, 800
Elastic limit per square inch of original section	do....	41, 000
*Elongation per inch after rupture	inch..	0. 2150
Elongation per inch under strain at elastic limit	do....	001300
Reduction in diameter at point of rupture	do....	.115
Reduction in area after rupture, per centum of original section		40. 8
Position of rupture		″½ from neck
Character of broken surface		granular, 50 per centum; silky, 50 per centum
Elongation of inch sections		″.31*, ″.12

No. 1667.

Marks, $\genfrac{}{}{0pt}{}{32\ T_{14}}{B\ T_{1}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000500	.000200	0.	....	
4, 000	20, 000	.000750	.000250	0.	....	
5, 000	25, 000	.000900	.000150	0.	....	
6, 000	30, 000	.001050	.000150	0.	....	
7, 000	35, 000	.001250	.000200	0.	....	
8, 000	40, 000	.001400	.000150	0.	....	
9, 000	45, 000	.001550	.000150	.000050	.000050	
9, 200	46, 000	.001550	0.	....	....	
9, 400	47, 000	.001600	.000050	....	....	
9, 600	48, 000	.001650	.000050	....	....	
9, 800	49, 000	.001700	.000050	....	....	
10, 000	50, 000	.001750	.000050	.000100	.000050	
10, 200	51, 000	.001750	0.	....	....	
10, 400	52, 000	.001850	.000100	....	....	
10, 600	53, 000	.001850	0.	....	....	
10, 800	54, 000	.001900	.000050	....	....	
11, 000	55, 000	.001950	.000050	.000100	0.	
11, 200	56, 000	.002000	.000050	....	....	
11, 400	57, 000	.002100	.000050	....	....	Elastic limit.
11, 600	58, 000	.002550	.000400	....	....	
11, 800	59, 000	.003350	.000800	....	....	
12, 000	60, 000	.004250	.000900	.002250	.002150	
12, 400	62, 000	.006000	.001750	....	....	
12, 800	64, 000	.008850	.002850	....	....	
13, 200	66, 000	.011200	.002350	....	....	
13, 600	68, 000	.013200	.002000	....	....	
14, 000	70, 000	.015350	.002150	....	....	
14, 400	72, 000	.017550	.002200	....	....	
14, 800	74, 000	.020000	.002450	....	....	
15, 200	76, 000	.022150	.002150	....	....	
15, 600	78, 000	.025050	.002900	....	....	
16, 000	80, 000	.028250	.003200	....	....	
16, 400	82, 000	.031750	.003500	....	....	
16, 800	84, 000	.035000	.003250	....	....	
17, 200	86, 000	.039250	.004250	....	....	
17, 600	88, 000	.043500	.004250	....	....	
18, 000	90, 000	.049350	.005850	....	....	
18, 400	92, 000	.056250	.006000	....	....	
18, 800	94, 000	.066200	.009950	....	....	
19, 200	96, 000	.0900	.0238	....	....	
19, 240	96, 200	.1050	.0150	....	....	Tensile strength.

General summary.

Specific gravity	7. 8589
Tensile strength per square inch of original section .... pounds..	96, 200
Elastic limit per square inch of original section .... do....	57, 000
Elongation per inch after rupture .... inch..	0. 1650
Elongation per inch under strain at elastic limit .... do....	.002150
Reduction in diameter at point of rupture .... do....	.085
Reduction in area after rupture, per centum of original section	30. 7
Position of rupture	″½ from neck
Character of broken surface	granular, 60 per centum; silky center, 40 per centum
Elongation of inch sections	″.25* .″08

No. 1668.

Marks, $\substack{32\,T_{14}\\ B\,T_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000500	.000250	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000750	.000100	0.	....	
6,000	30,000	.000850	.000100	0.	....	
7,000	35,000	.001000	.000150	0.	....	
8,000	40,000	.001150	.000150	0.	....	
9,000	45,000	.001350	.000200	0.	....	
9,200	46,000	.001400	.000050	....	....	
9,400	47,000	.001450	.000050	....	....	
9,600	48,000	.001450	0.	....	....	
9,800	49,000	.001500	.000050	....	....	
10,000	50,000	.001550	.000050	0.	....	
10,200	51,000	.001600	.000050	....	....	
10,400	52,000	.001650	.000050	....	....	
10,600	53,000	.001650	0.	....	....	
10,800	54,000	.001700	.000050	....	....	
11,000	55,000	.001750	.000050	0.	....	
11,200	56,000	.001800	.000050	....	....	
11,400	57,000	.001850	.000050	....	....	
11,600	58,000	.001850	0.	....	....	Elastic limit.
11,800	59,000	.001950	.000100	....	....	
12,000	60,000	.002050	.000100	.000200	.000200	
12,200	61,000	.002600	.000550	....	....	
12,400	62,000	.002850	.000250	....	....	
12,600	63,000	.003300	.000450	....	....	
12,800	64,000	.004000	.000700	....	....	
13,200	66,000	.006000	.001000	....	....	
13,600	68,000	.008500	.002500	....	....	
14,000	70,000	.011050	.002550	....	....	
14,400	72,000	.013000	.001950	....	....	
14,800	74,000	.014900	.001900	....	....	
15,200	76,000	.017450	.002550	....	....	
15,600	78,000	.019750	.002300	....	....	
16,000	80,000	.022100	.002350	....	....	
16,400	82,000	.025600	.003500	....	....	
16,800	84,000	.028250	.002650	....	....	
17,200	86,000	.031250	.003000	....	....	
17,600	88,000	.034250	.003000	....	....	
18,000	90,000	.038000	.003750	....	....	
18,400	92,000	.042300	.004300	....	....	
18,800	94,000	.047600	.005300	....	....	
19,200	96,000	.055600	.008000	....	....	
19,600	98,000	.0650	.0094	....	....	
20,000	100,000	.0900	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	100,000
Elastic limit per square inch of original section	do....	58,000
Elongation per inch after rupture	inch..	0.1500
Elongation per inch under strain at elastic limit	do....	.001850
Reduction in diameter at point of rupture	do....	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		″.35 from neck
Character of broken surface		granular at circumference; silky center
Elongation of inch sections		″.22*, ″.08

No. 571.

Marks, $^{32}_{\mathrm{B}}{}^{\mathrm{T}_{14}}_{\mathrm{T}_{2}}$
Length, 4″.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000450	.000200	0.	....	
10,000	20,000	.000550	.000100	0.	....	
12,500	25,000	.000750	.000200	0.	....	
15,000	30,000	.000900	.000150	0.	....	
17,500	35,000	.001050	.000150	0.	....	
20,000	40,000	.001200	.000150	0.	....	
22,500	45,000	.001350	.000150	0.	....	
25,000	50,000	.001550	.000200	0.	....	
25,500	51,000	.001550	0.	....	....	
26,000	52,000	.001550	0.	....	....	
26,500	53,000	.001600	.000050	....	....	
27,000	54,000	.001650	.000050	....	....	
27,500	55,000	.001700	.000050	0.	....	
28,000	56,000	.001700	0.	....	....	Elastic limit.
28,500	57,000	.001650	—.000050	....	....	
29,000	58,000	.001450	—.000200	....	....	
29,500	59,000	.001100	—.000350	....	....	
30,000	60,000	.000900	—.000200	—.000100	—.000100	
50,980	101,960	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	56,000
Compression per inch under stress at elastic limit	inch..	0.001700
Ultimate strength per square inch of original section	pounds..	101,960
Manner of failure		triple flexure

No. 1669.

Marks, $\substack{32\,T_{14}\\ M\,T_{1}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000250	.000100	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000550	.000150	0.	....	
5, 000	25, 000	.000700	.000150	0.	....	
6, 000	30, 000	.000900	.000200	0.	....	
7, 000	35, 000	.001100	.000200	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001400	.000150	0.	....	
9, 200	46, 000	.001400	0.	....	....	
9, 400	47, 000	.001450	.000050	....	....	
9, 600	48, 000	.001450	0.	....	....	
9, 800	49, 000	.001500	.000050	....	....	
10, 000	50, 000	.001550	.000050	0.	....	
10, 200	51, 000	.001550	0.	....	....	
10, 400	52, 000	.001600	.000050	....	....	
10, 600	53, 000	.001650	.000050	....	....	
10, 800	54, 000	.001700	.000050	....	....	
11, 000	55, 000	.001700	0.	0.	....	Elastic limit.
11, 200	56, 000	.001850	.000150	....	....	
11, 400	57, 000	.002500	.000650	....	....	
11, 600	58, 000	.003500	.001000	....	....	
11, 800	59, 000	.004800	.001300	....	....	
12, 000	60, 000	.006650	.001850	.004400	.004400	
12, 400	62, 000	.008600	.001950	....	....	
12, 800	64, 000	.011250	.002650	....	....	
13, 200	66, 000	.014150	.002900	....	....	
13, 600	68, 000	.016250	.002100	....	....	
14, 000	70, 000	.019000	.002750	....	....	
14, 400	72, 000	.021750	.002750	....	....	
14, 800	74, 000	.025000	.003250	....	....	
15, 200	76, 000	.028000	.003000	....	....	
15, 600	78, 000	.031250	.003250	....	....	
16, 000	80, 000	.035600	.004350	....	....	
16, 400	82, 000	.040000	.004400	....	....	
16, 800	84, 000	.045500	.005500	....	....	
17, 200	86, 000	.053750	.008250	....	....	
17, 600	88, 000	.065000	.011250	....	....	
18, 000	90, 000	.084500	.019500	....	....	
18, 080	90, 400	.1100	.0255	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	90, 400
Elastic limit per square inch of original section	do	55, 000
Elongation per inch after rupture	inch..	0. 1900
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.115
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		″.70 from neck; oblique
Character of broken surface		silky
Elongation of inch sections		″.29*, ″.09

No. 1670.

Marks, $\begin{smallmatrix}32\,T_{14}\\ M\,T\end{smallmatrix}$,
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000250	.000100	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000550	.000150	0.	....	
5, 000	25, 000	.000750	.000200	0.	....	
6, 000	30, 000	.001000	.000250	0.	....	
7, 000	35, 000	.001150	.000150	0.	....	
8, 000	40, 000	.001300	.000150	0.	....	
9, 000	45, 000	.001450	.000150	0.	....	
10, 000	50, 000	.001650	.000200	.000050	.000050	
10, 200	51, 000	.001650	0.	....	....	
10, 400	52, 000	.001700	.000050	....	....	
10, 600	53, 000	.001750	.000050	....	....	
10, 800	54, 000	.001800	.000050	....	....	Elastic limit.
11, 000	55, 000	.002150	.000350	.000400	.000350	
11, 200	56, 000	.002750	.000600	....	....	
11, 400	57, 000	.003750	.001000	....	....	
11, 600	58, 000	.005100	.001350	....	....	
11, 800	59, 000	.006700	.001600	....	....	
12, 000	60, 000	.007750	.001050	.005550	.005150	
12, 400	62, 000	.009700	.001950	....	....	
12, 800	64, 000	.012050	.002350	....	....	
13, 200	66, 000	.014550	.002500	....	....	
13, 600	68, 000	.016750	.002200	....	....	
14, 000	70, 000	.019250	.002500	....	....	
14, 400	72, 000	.022050	.002800	....	....	
14, 800	74, 000	.024600	.002550	....	....	
15, 200	76, 000	.027850	.003250	....	....	
15, 600	78, 000	.031050	.003200	....	....	
16, 000	80, 000	.034700	.003650	....	....	
16, 400	82, 000	.038900	.004200	....	....	
16, 800	84, 000	.044550	.005650	....	....	
17, 200	86, 000	.050000	.005450	....	....	
17, 600	88, 000	.059500	.009500	....	....	
18, 000	90, 000	.072500	.013000	....	....	
18, 360	91, 800	.1100	.0375	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	91, 800
Elastic limit per square inch of original section	do....	54, 000
Elongation per inch after rupture	inch..	0. 2000
Elongation per inch under strain at elastic limit	do....	.001800
Reduction in diameter at point of rupture	do....	.134
Reduction in area after rupture, per centum of original section		46. 2
Position of rupture		″.55 from neck
Character of broken surface		silky; trace of granulation
Elongation of inch sections		″.31*, ″.09

[Additional specimens.]

No. 2248.

Marks, $^{32\,T_{16}}_{\;B\,T_{4}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001250	.000150	0.	....	
9,000	45,000	.001450	.000200	0.	....	
9,200	46,000	.001500	.000050	....	....	
9,400	47,000	.001600	.000100	....	....	Elastic limit.
9,600	48,000	.001800	.000200	....	....	
9,800	49,000	.002500	.000700	....	....	
10,000	50,000	.003400	.000900	....	....	
10,200	51,000	.005500	.002100	....	....	
10,400	52,000	.006450	.000950	....	....	
10,600	53,000	.007500	.001050	....	....	
10,800	54,000	.008400	.000900	....	....	
11,000	55,000	.009500	.001100	....	....	
11,200	56,000	.010850	.001350	....	....	
11,400	57,000	.011550	.000700	....	....	
11,600	58,000	.012450	.000900	....	....	
11,800	59,000	.013500	.001050	....	....	
12,000	60,000	.014900	.001400	....	....	
12,400	62,000	.017250	.002350	....	....	
12,800	64,000	.019900	.002650	....	....	
13,200	66,000	.022450	.002550	....	....	
13,600	68,000	.024550	.002100	....	....	
14,000	70,000	.027500	.002950	....	....	
14,400	72,000	.031000	.003500	....	....	
14,800	74,000	.034750	.003750	....	....	
15,200	76,000	.038500	.003750	....	....	
15,600	78,000	.044500	.006000	....	....	
16,000	80,000	.051250	.006750	....	....	
16,400	82,000	.059500	.008250	....	....	
16,800	84,000	.0700	.0105	....	....	
17,200	86,000	.0950	.0250	....	....	
17,370	86,850	.1250	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	86,850
Elastic limit per square inch of original section	do....	47,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do....	.001600
Reduction in diameter at point of rupture	do....	.105
Reduction in area after rupture, per centum of original section	do....	37.1
Position of rupture		″½ from neck
Character of broken surface		granular; dull center
Elongation of inch sections		″.29,* ″.11

No. 2249.

Marks, $\begin{smallmatrix}32\,T_{14}\\ B\,T_{5}\end{smallmatrix}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000700	.000200	0.	....	
5,000	25,000	.000900	.000200	0.	....	
6,000	30,000	.001100	.000200	0.	....	
7,000	35,000	.001250	.000150	0.	....	
8,000	40,000	.001400	.000150	0.	....	
9,000	45,000	.001550	.000150	....	....	
9,200	46,000	.001600	.000050	....	....	
9,400	47,000	.001650	.000050	....	....	
9,600	48,000	.001750	.000100	....	....	Elastic limit.
9,800	49,000	.002350	.000600	....	....	
10,000	50,000	.003500	.001150	....	....	
10,200	51,000	.004650	.001150	....	....	
10,400	52,000	.005650	.001000	....	....	
10,600	53,000	.006600	.000950	....	....	
10,800	54,000	.007650	.001050	....	....	
11,000	55,000	.008500	.000850	....	....	
11,200	56,000	.009550	.001050	....	....	
11,400	57,000	.010350	.000800	....	....	
11,600	58,000	.011600	.001250	....	....	
11,800	59,000	.012750	.001150	....	....	
12,000	60,000	.013750	.001000	....	....	
12,400	62,000	.015900	.002150	....	....	
12,800	64,000	.017800	.001900	....	....	
13,200	66,000	.020000	.002200	....	....	
13,600	68,000	.023000	.003000	....	....	
14,000	70,000	.025500	.002500	....	....	
14,400	72,000	.029000	.003500	....	....	
14,800	74,000	.032250	.003250	....	....	
15,200	76,000	.035750	.003500	....	....	
15,600	78,000	.040000	.004250	....	....	
16,000	80,000	.045100	.005100	....	....	
16,400	82,000	.052000	.006900	....	....	
16,800	84,000	.062100	.010100	....	....	
17,200	86,000	.076000	.013900	....	....	
17,600	88,000	.1050	.0290	....	....	
17,650	88,250	.1300	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	88,250
Elastic limit per square inch of original section	do....	48,000
Elongation per inch after rupture	inch..	0.1900
Elongation per inch under strain at elastic limit	do....	.001750
Reduction in diameter at point of rupture	do....	.105
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		½ inch from neck
Character of broken surface		granular, 60 per centum; dull silky, 40 per centum
Elongation of inch sections		″.20*, ″.12

No. 624.

Marks, $^{32\,T_{14}}_{B\,T_{6}}$
Length, 3″.995.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000500	.000200	0.	....	
10,000	20,000	.000650	.000150	0.	....	
12,500	25,000	.000800	.000150	0.	....	
15,000	30,000	.000950	.000150	0.	....	
17,500	35,000	.001100	.000150	0.	....	
20,000	40,000	.001250	.000150	0.	....	
20,500	41,000	.001300	.000050	....	....	
21,000	42,000	.001300	0.	....	....	
21,500	43,000	.001350	.000050	....	....	
22,000	44,000	.001400	.000050	....	....	
22,500	45,000	.001450	.000050	0.	....	
23,000	46,000	.001500	.000050	....	....	
23,500	47,000	.001500	0.	....	....	Elastic limit.
24,000	48,000	.001750	.000250	....	....	
24,500	49,000	.004750	.003000	....	....	
25,000	50,000	.006300	.001550	.004550	.004550	
46,300	92,600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	47,000
Compression per inch under stress at elastic limit	inch..	0.001500
Ultimate strength per square inch of original section	pounds..	92,600
Manner of failure		triple flexure

No. 2251.

Marks, $\frac{32\ T_{14}}{M\ T}$,
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Sucessive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000500	.000150	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.000900	.000100	0.	....	
7,000	35,000	.001100	.000200	....	....	
8,000	40,000	.001350	.000250	....	....	
9,000	45,000	.001500	.000150	....	....	
9,200	46,000	.001550	.000050	....	....	
9,400	47,000	.001600	.000050	....	....	
9,600	48,000	.001650	.000050	....	....	
9,800	49,000	.001700	.000050	....	....	Elastic limit.
10,000	50,000	.002350	.000650	....	....	
10,200	51,000	.002800	.000450	....	....	
10,400	52,000	.003350	.000550	....	....	
10,600	53,000	.005300	.001950	....	....	
10,800	54,000	.007750	.002450	....	....	
11,000	55,000	.009250	.001500	....	....	
11,200	56,000	.010500	.001250	....	....	
11,400	57,000	.011500	.001000	....	....	
11,600	58,000	.012750	.001250	....	....	
11,800	59,000	.014000	.001250	....	....	
12,000	60,000	.015250	.001250	....	....	
12,400	62,000	.017550	.002300	....	....	
12,800	64,000	.020000	.002450	....	....	
13,200	66,000	.024250	.004250	....	....	
13,600	68,000	.026200	.001950	....	....	
14,000	70,000	.029550	.003350	....	....	
14,400	72,000	.033500	.003950	....	....	
14,800	74,000	.037500	.004000	....	....	
15,200	76,000	.044500	.007000	....	....	
15,600	78,000	.050600	.006100	....	....	
16,000	80,000	.059250	.008650	....	....	
16,400	82,000	.071000	.011750	....	....	
16,800	84,000	.0950	.0240	....	....	
16,950	84,750	.1350	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	84,750
Elastic limit per square inch of original section	do....	49,000
Elongation per inch after rupture	inch..	0.2100
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		½-inch from neck
Character of broken surface		silky; trace of granulation
Elongation of inch sections		''.30*, ''.12

No. 2250.

Marks, $\overset{32\ T_{14}}{M\ T_4}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000200	.000200	0.	....	
2,000	10,000	.000400	.000200	0.	....	
3,000	15,000	.000550	.000150	0.	....	
4,000	20,000	.000700	.000150	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.001000	.000150	0.	....	
7,000	35,000	.001200	.000200	0.	....	
8,000	40,000	.001400	.000200	0.	....	
9,000	45,000	.001550	.000150	0.	....	
9,200	46,000	.001550	0.	....	....	
9,400	47,000	.001650	.000100	....	....	Elastic limit
9,600	48,000	.002850	.001200	....	....	
9,800	49,000	.003500	.000650	....	....	
10,000	50,000	.004700	.001200	....	....	
10,200	51,000	.005200	.001500	....	....	
10,400	52,000	.006350	.001150	....	....	
10,600	53,000	.007900	.001550	....	....	
10,800	54,000	.009700	.001800	....	....	
11,000	55,000	.011000	.001300	....	....	
11,200	56,000	.012250	.001250	....	....	
11,400	57,000	.013550	.001300	....	....	
11,600	58,000	.015000	.001450	....	....	
11,800	59,000	.016000	.001000	....	....	
12,000	60,000	.017250	.001250	....	....	
12,400	62,000	.019800	.002550	....	....	
12,800	64,000	.022600	.002800	....	....	
13,200	66,000	.026150	.003550	....	....	
13,600	68,000	.029750	.003600	....	....	
14,000	70,000	.034000	.004250	....	....	
14,400	72,000	.039250	.005250	....	....	
14,800	74,000	.044000	.004750	....	....	
15,200	76,000	.051000	.007000	....	....	
15,600	78,000	.0600	.0090	....	....	
16,000	80,000	.0700	.0100	....	....	
16,400	82,000	.0950	.0250	....	....	
16,450	82,250	.1400	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	82,250
Elastic limit per square inch of original section	do....	47,000
Elongation per inch after rupture	inch..	0.2150
Elongation per inch under strain at elastic limit	do....	.001650
Reduction in diameter at point of rupture	do....	.145
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		¼ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.34*, ″.09

No. 2230.

Marks, $\begin{smallmatrix}32 & T_{15}\\ B & T_4\end{smallmatrix}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000250	.000100	0.	....	
3, 000	15, 000	.000550	.000300	0.	....	
4, 000	20, 000	.000650	.000100	0.	....	
5, 000	25, 000	.000800	.000150	0.	....	
6, 000	30, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001150	.000200	0.	....	
8, 000	40, 000	.001300	.000150	0.	....	
9, 000	45, 000	.001450	.000150	0.	....	
10, 000	50, 000	.001600	.000150	0.	....	
10, 200	51, 000	.001650	.000050	....	....	
10, 400	52, 000	.001700	.000050	....	....	
10, 600	53, 000	.001800	.000100	....	....	Elastic limit.
10, 800	54, 000	.002450	.000650	....	....	
11, 000	55, 000	.004250	.001800	....	....	
11, 200	56, 000	.006650	.002400	....	....	
11, 400	57, 000	.008100	.001450	....	....	
11, 600	58, 000	.009350	.001250	....	....	
11, 800	59, 000	.010600	.001250	....	....	
12, 000	60, 000	.011800	.001200	....	....	
12, 400	62, 000	.014200	.002400	....	....	
12, 800	64, 000	.016800	.002600	....	....	
13, 200	66, 000	.020000	.003200	....	....	
13, 600	68, 000	.023200	.003200	....	....	
14, 000	70, 000	.026100	.002900	....	....	
14, 400	72, 000	.029500	.003400	....	....	
14, 800	74, 000	.033500	.004000	....	....	
15, 200	76, 000	.037800	.004300	....	....	
15, 600	78, 000	.043000	.005200	....	....	
16, 000	80, 000	.050000	.007000	....	....	
16, 400	82, 000	.059500	.009500	....	....	
16, 800	84, 000	.0700	.0105	....	....	
17, 170	85, 850	.1200	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	85, 850
Elastic limit per square inch of original section	do....	53, 000
Elongation per inch after rupture	inch..	0. 2100
Elongation per inch under strain at elastic limit	do....	.001800
Reduction in diameter at point of rupture	do....	.124
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		″.65 from neck
Character of broken surface		silky
Elongation of inch sections		″.32*, ″.10

No. 2231.

Marks, $\genfrac{}{}{0pt}{}{32\ T_{15}}{B\ T_{2}}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000800	.000200	0.	....	
6, 000	30, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001100	.000150	0.	....	
8, 000	40, 000	.001300	.000200	0.	....	
9, 000	45, 000	.001450	.000150	0.	....	
10, 000	50, 000	.001650	.000200	0.	....	
10, 200	51, 000	.001700	.000050	....	....	
10, 400	52, 000	.001700	0.	....	....	
10, 600	53, 000	.001750	.000050	....	....	
10, 800	54, 000	.001800	.000050	....	....	
11, 000	55, 000	.001800	0.	....	....	Elastic limit.
11, 200	56, 000	.002050	.000250	....	....	
11, 400	57, 000	.003000	.000950	....	....	
11, 600	58, 000	.003550	.000550	....	....	
11, 800	59, 000	.006500	.002950	....	....	
12, 000	60, 000	.007700	.001200	....	....	
12, 400	62, 000	.010850	.003150	....	....	
12, 800	64, 000	.012750	.001900	....	....	
13, 200	66, 000	.015250	.002500	....	....	
13, 600	68, 000	.018000	.002750	....	....	
14, 000	70, 000	.020600	.002600	....	....	
14, 400	72, 000	.023750	.003150	....	....	
14, 800	74, 000	.027000	.003250	....	....	
15, 200	76, 000	.030750	.003750	....	....	
15, 600	78, 000	.035000	.004250	....	....	
16, 000	80, 000	.040000	.005000	....	....	
16, 400	82, 000	.045250	.005250	....	....	
16, 800	84, 000	.053750	.008500	....	....	
17, 200	86, 000	.064000	.010250	....	....	
17, 600	88, 000	.0900	.0260	....	....	
17, 780	88, 900	.1100	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	88, 900
Elastic limit per square inch of original section	do....	55, 000
Elongation per inch after rupture	inch..	0. 2400
Elongation per inch under strain at elastic limit	do ...	.001800
Reduction in diameter at point of rupture	do....	.134
Reduction in area after rupture, per centum of original section		46. 2
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.33*, ″.15

No. 620.

Marks, $\overset{33}{B}\,\overset{T_{18}}{T_{3}}$
Length, 3″.995.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000200	.000200	0.	....	
5,000	10,000	.000350	.000150	0.	....	
7,500	15,000	.000500	.000150	0.	....	
10,000	20,000	.000650	.000150	0.	....	
12,500	25,000	.000800	.000150	0.	....	
15,000	30,000	.001000	.000200	0.	....	
17,500	35,000	.001200	.000200	0.	....	
20,000	40,000	.001300	.000100	0.	....	
22,500	45,000	.001450	.000150	0.	....	
23,000	46,000	.001500	.000050	....	....	
23,500	47,000	.001500	0.	....	....	
24,000	48,000	.001500	0.	....	....	
24,500	49,000	.001550	.000050	....	....	
25,000	50,000	.001650	.000100	0.	....	Elastic limit.
25,500	51,000	.001750	.000100	....	....	
26,000	52,000	.001750	0.	....	....	
26,500	53,000	.001500	.000250	....	....	
27,000	54,000	.001050	.000450	....	....	
27,500	55,000	.000800	.000250	−.001000	−.001000	
28,000	56,000	.001000	.000200	....	....	
28,500	57,000	.001750	.000750	....	....	
29,000	58,000	.003450	.001700	....	....	
29,500	59,000	.004250	.000800	....	....	
30,000	60,000	.005650	.001400	−.003500	.004500	
46,900	93,800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	50,000
Compression per inch under stress at elastic limit	inch..	0.001650
Ultimate strength per square inch of original section	pounds..	93,800
Manner of failure		triple flexure

No. 2232.

Marks, $\substack{32\ T_{18} \\ M\ T_1}$

Diameter, ″.504.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000350	.000150	0.	....	
4, 000	20, 000	.000500	.000150	0.	....	
5, 000	25, 000	.000700	.000200	0.	....	
6, 000	30, 000	.000950	.000250	0.	....	
7, 000	35, 000	.001100	.000150	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001450	.000200	0.	....	
10, 000	50, 000	.001650	.000200	0.	....	
10, 200	51, 000	{ .001700 .007850	.000050 .006150	....	....	Elastic limit.
10, 400	52, 000	.008750	.000900	....	....	
10, 600	53, 000	.009950	.001200	....	....	
10, 800	54, 000	.010500	.000550	....	....	
11, 000	55, 000	.011500	.001000	....	....	
11, 200	56, 000	.012700	.001200	....	....	
11, 400	57, 000	.013750	.001050	....	....	
11, 600	58, 000	.015350	.001600	....	....	
11, 800	59, 000	.016550	.001200	....	....	
13, 000	60, 000	.017750	.001200	....	....	
12, 400	62, 000	.020250	.002500	....	....	
12, 800	64, 000	.023250	.003000	....	....	
13, 200	66, 000	.026100	.002850	....	....	
13, 600	68, 000	.029500	.003400	....	....	
14, 000	70, 000	.033100	.003600	....	....	
14, 400	72, 000	.037500	.004400	....	....	
14, 800	74, 000	.042250	.004750	....	....	
15, 200	76, 000	.048500	.006250	....	....	
15, 600	78, 000	.056000	.007500	....	....	
16, 000	80, 000	.066000	.010000	....	....	
16, 400	82, 000	.0900	.0240	....	....	
16, 800	84, 000	.1500	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	84, 000
Elastic limit per square inch of original section	do....	51, 000
Elongation per inch after rupture	inch..	0. 2300
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.124
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		¼ inch from neck
Character of broken surface		silky ; traces of granulation
Elongation of inch sections		″.31*, ″.15

No. 2233.

Marks, $^{32\ T_{16}}_{M\ T_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000350	.000100	0.	....	
4,000	20,000	.000550	.000200	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001250	.000150	0.	....	
9,000	45,000	.001450	.000200	0.	....	
9,200	46,000	.001450	0.	....	....	
9,400	47,000	.001500	.000050	....	....	
9,600	48,000	.001550	.000050	....	....	
9,800	49,000	.001600	.000050	....	....	
10,000	50,000	.001650	.000050	....	....	Elastic limit.
10,200	51,000	.005600	.003950	....	....	
10,400	52,000	.009000	.003400	....	....	
10,600	53,000	.010350	.001350	....	....	
10,800	54,000	.011350	.001000	....	....	
11,000	55,000	.012200	.000850	....	....	
11,200	56,000	.013750	.001550	....	....	
11,400	57,000	.014750	.001000	....	....	
11,600	58,000	.015850	.001100	....	....	
11,800	59,000	.017100	.001250	....	....	
12,000	60,000	.018500	.001400	....	....	
12,400	62,000	.021250	.002750	....	....	
12,800	64,000	.024250	.003000	....	....	
13,200	66,000	.027550	.003300	....	....	
13,600	68,000	.031100	.003550	....	....	
14,000	70,000	.035600	.004500	....	....	
14,400	72,000	.040000	.004400	....	....	
14,800	74,000	.045600	.005600	....	....	
15,200	76,000	.052750	.007150	....	....	
15,600	78,000	.061000	.008250	....	....	
16,000	80,000	.0750	.0140	....	....	
16,400	82,000	.1050	.0300	....	....	
16,500	82,500	.1300	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	82,500
Elastic limit per square inch of original section	do	50,000
Elongation per inch after rupture	inch	0.2050
Elongation per inch under strain at elastic limit	do	.001650
Reduction in diameter at point of rupture	do	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		[illegible] inch from neck
Character of broken surface		silky
Elongation of inch sections		″.31+, ″.10

No. 2232.

Marks, $\substack{32\ T_{18}\\ M\ T_1}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000350	.000150	0.	....	
4, 000	20, 000	.000500	.000150	0.	....	
5, 000	25, 000	.000700	.000200	0.	....	
6, 000	30, 000	.000950	.000250	0.	....	
7, 000	35, 000	.001100	.000150	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001450	.000200	0.	....	
10, 000	50, 000	.001650	.000200	0.	....	
10, 200	51, 000	.001700 .007850	.000050 .006150	....	....	Elastic limit.
10, 400	52, 000	.008750	.000900	....	....	
10, 600	53, 000	.009950	.001200	....	....	
10, 800	54, 000	.010500	.000550	....	....	
11, 000	55, 000	.011500	.001000	....	....	
11, 200	56, 000	.012700	.001200	....	....	
11, 400	57, 000	.013750	.001050	....	....	
11, 600	58, 000	.015350	.001600	....	....	
11, 800	59, 000	.016550	.001200	....	....	
12, 000	60, 000	.017750	.001200	....	....	
12, 400	62, 000	.020250	.002500	....	....	
12, 800	64, 000	.023250	.003000	....	....	
13, 200	66, 000	.026100	.002850	....	....	
13, 600	68, 000	.029500	.003400	....	....	
14, 000	70, 000	.033100	.003600	....	....	
14, 400	72, 000	.037500	.004400	....	....	
14, 800	74, 000	.042250	.004750	....	....	
15, 200	76, 000	.048500	.006250	....	....	
15, 600	78, 000	.056000	.007500	....	....	
16, 000	80, 000	.066000	.010000	....	....	
16, 400	82, 000	.0900	.0240	....	....	
16, 800	84, 000	.1500	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	84, 000
Elastic limit per square inch of original section	do....	51, 000
Elongation per inch after rupture	inch..	0. 2300
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.124
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		½ inch from neck
Character of broken surface		silky; traces of granulation
Elongation of inch sections		″.31*, ″.15

No. 2233.

Marks, $\begin{matrix}32\ T_{16}\\ M\ T_{2}\end{matrix}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000350	.000100	0.	....	
4,000	20,000	.000550	.000200	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001250	.000150	0.	....	
9,000	45,000	.001450	.000200	0.	....	
9,200	46,000	.001450	0.	....	....	
9,400	47,000	.001500	.000050	....	....	
9,600	48,000	.001550	.000050	....	....	
9,800	49,000	.001600	.000050	....	....	
10,000	50,000	.001650	.000050	....	....	Elastic limit.
10,200	51,000	.005600	.003950	....	....	
10,400	52,000	.009000	.003400	....	....	
10,600	53,000	.010350	.001350	....	....	
10,800	54,000	.011350	.001000	....	....	
11,000	55,000	.012200	.000850	....	....	
11,200	56,000	.013750	.001550	....	....	
11,400	57,000	.014750	.001000	....	....	
11,600	58,000	.015850	.001100	....	....	
11,800	59,000	.017100	.001250	....	....	
12,000	60,000	.018500	.001400	....	....	
12,400	62,000	.021250	.002750	....	....	
12,800	64,000	.024250	.003000	....	....	
13,200	66,000	.027550	.003300	....	....	
13,600	68,000	.031100	.003550	....	....	
14,000	70,000	.035600	.004500	....	....	
14,400	72,000	.040000	.004400	....	....	
14,800	74,000	.045600	.005600	....	....	
15,200	76,000	.052750	.007150	....	....	
15,600	78,000	.061000	.008250	....	....	
16,000	80,000	.0750	.0140	....	....	
16,400	82,000	.1050	.0300	....	....	
16,500	82,500	.1300	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	82,500
Elastic limit per square inch of original section	do....	50,000
Elongation per inch after rupture	inch..	0.2050
Elongation per inch under strain at elastic limit	do....	.001650
Reduction in diameter at point of rupture	do....	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		[illegible] inch from neck
Character of broken surface		silky
Elongation of inch sections		″.31+, ″.10

No. 2399.

Marks, $^{32\,T_{16}}_{B\,T_1}$.
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000650	.000200	0.	....	
5, 000	25, 000	.000800	.000150	0.	....	
6, 000	30, 000	.001000	.000250	0.	....	
7, 000	35, 000	.001150	.000150	....	....	
8, 000	40, 000	.001350	.000200	....	....	
9, 000	45, 000	.001550	.000200	....	....	
10, 000	50, 000	.001700	.000150	....	....	
10, 200	51, 000	.001750	.000050	....	....	
10, 400	52, 000	.001850	.000100	....	....	Elastic limit.
10, 600	53, 000	.002100	.000250	....	....	
10, 800	54, 000	.002700	.000600	....	....	
11, 000	55, 000	.003550	.000850	....	....	
11, 200	56, 000	.004250	.000700	....	....	
11, 400	57, 000	.005650	.001400	....	....	
11, 600	58, 000	.007000	.001350	....	....	
11, 800	59, 000	.008050	.001050	....	....	
12, 000	60, 000	.009050	.001000	....	....	
12, 400	62, 000	.011250	.002200	....	....	
12, 800	64, 000	.013250	.002000	....	....	
13, 200	66, 000	.015900	.002650	....	....	
13, 600	68, 000	.018100	.002200	....	....	
14, 000	70, 000	.020600	.002500	....	....	
14, 400	72, 000	.023250	.002650	....	....	
14, 800	74, 000	.026050	.002800	....	....	
15, 200	76, 000	.029500	.003450	....	....	
15, 600	78, 000	.032500	.003000	....	....	
16, 000	80, 000	.036550	.004050	....	....	
16, 400	82, 000	.042000	.005450	....	....	
16, 800	84, 000	.047000	.005000	....	....	
17, 200	86, 000	.0550	.0080	....	....	
17, 600	88, 000	.0600	.0050	....	....	
17, 850	89, 400	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	89, 400
Elastic limit per square inch of original section	do....	52, 000
Elongation per inch after rupture	inch..	0. 0700
Elongation per inch under strain at elastic limit	do....	.001850
Reduction in diameter at point of rupture	do....	.025
Reduction in area after rupture, per centum of original section		9. 5
Position of rupture		″.25 from neck
Character of broken surface		granular; flaky spot near circumference
Elongation of inch sections		″.09+, ″.05

No. 2400.

Marks, $\overset{32\ T_{16}}{B\ T_3}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000450	.000100	0.	....	
5,000	25,000	.000650	.000200	0.	....	
6,000	30,000	.000800	.000150	0.	....	
7,000	35,000	.001000	.000200	0.	....	
8,000	40,000	.001100	.000100	0.	....	
9,000	45,000	.001300	.000200	....	....	
9,200	46,000	.001350	.000050	....	....	
9,400	47,000	.001400	.000050	....	....	
9,600	48,000	.001450	.000050	....	....	
9,800	49,000	.001550	.000100	....	....	Elastic limit.
10,000	50,000	.002050	.000500	....	....	
10,200	51,000	.002600	.000550	....	....	
10,400	52,000	.003000	.000400	....	....	
10,600	53,000	.004150	.001150	....	....	
10,800	54,000	.005600	.001450	....	....	
11,000	55,000	.007050	.001450	....	....	
11,200	56,000	.008100	.001050	....	....	
11,400	57,000	.009250	.001150	....	....	
11,600	58,000	.010150	.000900	....	....	
11,800	59,000	.011200	.001050	....	....	
12,000	60,000	.012250	.001050	....	....	
12,400	62,000	.014200	.001950	....	....	
12,800	64,000	.016250	.002050	....	....	
13,200	66,000	.019250	.003000	....	....	
13,600	68,000	.021750	.002500	....	....	
14,000	70,000	.024600	.002850	....	....	
14,400	72,000	.027850	.003250	....	....	
14,800	74,000	.031200	.003350	....	....	
15,200	76,000	.034750	.003550	....	....	
15,600	78,000	.039000	.004250	....	....	
16,000	80,000	.044500	.005500	....	....	
16,400	82,000	.052000	.007500	....	....	
16,750	83,750	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	83,750
Elastic limit per square inch of original section	do....	49,000
Elongation per inch after rupture	inch..	0.0600
Elongation per inch under strain at elastic limit	do....	.001550
Reduction in diameter at point of rupture	do....	.025
Reduction in area after rupture, per centum of original section		9.5
Position of rupture		″.95 from neck
Character of broken surface		granular; contains line of flaky metal
Elongation of inch sections		″.07*, ″.05

No. 647.

Marks, $^{32\ T_{16}}_{B\ T_{2}}$

Length, 4".004.

Diameter, ".798.

Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.		
5,000	10,000	.000250	.000100	0.		
7,500	15,000	.000400	.000150	0.		
10,000	20,000	.000550	.000150	0.		
12,500	25,000	.000700	.000150	0.		
15,000	30,000	.000850	.000150	0.		
17,500	35,000	.001050	.000200	0.		
20,000	40,000	.001200	.000150	0.		
22,500	45,000	.001350	.000150	0.		
24,000	48,000	.001450	.000100			
24,500	49,000	.001500	.000050			Elastic limit.
25,000	50,000	.002050	.000550			
25,500	51,000	.003050	.001000			
26,000	52,000	.004100	.001050			
26,500	53,000	.004850	.000750			
27,000	54,000	.006000	.001150			
27,500	55,000	.006800	.000800			
28,000	56,000	.008150	.001350			
46,500	93,000					Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	49,000
Compression per inch under stress at elastic limit	inch..	0.001500
Ultimate strength per square inch of original section	pounds..	93,000
Manner of failure		triple flexure

No. 2401.

Marks, $\begin{smallmatrix}32 & T_{16}\\ M & T\end{smallmatrix}$,
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000450	.000200	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000950	.000200	0.	....	
7, 000	35, 000	.001100	.000150	....	....	
8, 000	40, 000	.001250	.000150	....	....	
9, 000	45, 000	.001450	.000200	....	....	
10, 000	50, 000	.001600	.000150	....	....	
10, 200	51, 000	.001650	.000050	....	....	Elastic limit.
10, 400	52, 000	.003100	.001450	....	....	
10, 600	53, 000	.006350	.003250	....	....	
10, 800	54, 000	.007300	.000950	....	....	
11, 000	55, 000	.008250	.000950	....	....	
11, 200	56, 000	.009100	.000850	....	....	
11, 400	57, 000	.010050	.000950	....	....	
11, 600	58, 000	.011100	.001050	....	....	
11, 800	59, 000	.012100	.001000	....	....	
12, 000	60, 000	.013750	.001650	....	....	
12, 400	62, 000	.016000	.002250	....	....	
12, 800	64, 000	.018500	.002500	....	....	
13, 200	66, 000	.021100	.002600	....	....	
13, 600	68, 000	.024000	.002900	....	....	
14, 000	70, 000	.027000	.003000	....	....	
14, 400	72, 000	.030600	.003600	....	....	
14, 800	74, 000	.034250	.003650	....	....	
15, 200	76, 000	.039000	.004750	....	....	
15, 600	78, 000	.043750	.004750	....	....	
16, 000	80, 000	.050250	.006500	....	....	
16, 400	82, 000	.0550	.004750	....	....	
16, 800	84, 000	.0650	.0100	....	....	
17, 200	86, 000	.0900	.0250	....	....	
17, 380	86, 900	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	86, 900
Elastic limit per square inch of original section	do	51, 000
Elongation per inch after rupture	inch	0. 2350
Elongation per inch under strain at elastic limit	do	.001650
Reduction in diameter at point of rupture	do	.125
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		1 inch from neck
Character of broken surface		silky
Elongation of inch sections		″.31*, ″.16

No. 2402.

Marks, $\overset{32\ T_{16}}{M\ T_{2}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001000	.000150	0.	....	
8,000	40,000	.001150	.000150	0.	....	
9,000	45,000	.001300	.000150	....	....	
10,000	50,000	.001500 .002750	.000200 .001250	....	....	Elastic limit.
10,200	51,000	.003650	.000900	....	....	
10,400	52,000	.004750	.001100	....	....	
10,600	53,000	.006600	.001850	....	....	
10,800	51,000	.007400	.000800	....	....	
11,000	55,000	.008500	.001100	....	....	
11,200	56,000	.009700	.001200	....	....	
11,400	57,000	.010800	.001100	....	....	
11,600	58,000	.012000	.001200	....	....	
11,800	59,000	.013500	.001500	....	....	
12,000	60,000	.014550	.001050	....	....	
12,400	62,000	.016500	.001950	....	....	
12,800	64,000	.019000	.002500	....	....	
13,200	66,000	.021250	.002250	....	....	
13,600	68,000	.024500	.003250	....	....	
14,000	70,000	.028000	.003500	....	....	
14,400	72,000	.031250	.003250	....	....	
14,800	74,000	.035000	.003750	....	....	
15,200	76,000	.039250	.004250	....	....	
15,600	78,000	.045000	.005750	....	....	
16,000	80,000	.052000	.007000	....	....	
16,400	82,000	.0600	.0080	....	....	
16,800	84,000	.0750	.0150	....	....	
17,200	86,000	.0950	.0200	....	....	
17,320	86,600	.1250	.0300	....	....	Tensile strength.

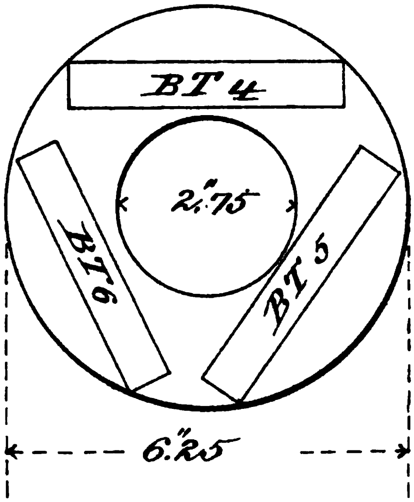
General summary.

Tensile strength per square inch of original section....................pounds.. 86,600
Elastic limit per square inch or original section....................do.... 50,000
Elongation per inch after rupture....................inch.. 0.2000
Elongation per inch under strain at elastic limit....................do.... .001500
Reduction in diameter at point of rupture....................do.... .125
Reduction in area after rupture, per centum of original section.................... 43.3
Position of rupture....................″.40 from neck
Character of broken surface....................silky
Elongation of inch sections.................... ″.30*, ″.10

Tube No. 76 3.2" Rifle

Additional specimens

Breech end



H Ex 31 49 2

No. 2447.

Marks, $^{32\ T_{16}}_{B\ T_4}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000350	.000100	0.	....	
4,000	20,000	.000550	.000200	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001050	.000150	0.	....	
8,000	40,000	.001200	.000150	0.	....	
9,000	45,000	.001350	.000150	0.	....	
10,000	50,000	.001500	.000150	....	....	
10,200	51,000	.001700	.000200	....	....	Elastic limit.
10,400	52,000	.002850	.001150	....	....	
10,600	53,000	.003750	.000900	....	....	
10,800	54,000	.004900	.001150	....	....	
11,000	55,.000	.006100	.001200	....	....	
11,200	56,000	.007250	.001150	....	....	
11,400	57,000	.007900	.000650	....	....	
11,600	58,000	.009150	.001250	....	....	
11,800	59,000	.009900	.000750	....	....	
12,000	60,000	.010750	.000850	....	....	
12,400	62,000	.012500	.001750	....	....	
12,800	64,000	.015000	.002500	....	....	
13,200	66,000	.017100	.002100	....	....	
13,600	68,000	.019850	.002750	....	....	
14,000	70,000	.022300	.002450	....	....	
14,400	72,000	.025300	.003000	....	....	
14,800	74,000	.027550	.002250	....	....	
15,200	76,000	.030600	.003050	....	....	
15,600	78,000	.034100	.003500	....	....	
16,000	80,000	.038250	.004150	....	....	
16,400	82,000	.043500	.005250	....	....	
16,800	84,000	.048500	.005000	....	....	
17,200	86,000	.056000	.007500	....	....	
17,600	88,000	.0650	.0090	....	....	
18,000	90,000	.0800	.0150	....	....	
18,390	91,950	.1300	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	91,950
Elastic limit per square inch of original section	do....	51,000
Elongation per inch after rupture	inch..	0.1900
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.105
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		½ inch from neck
Character of broken surface		granular at circumference ; dull flaky cente
Elongation of inch sections		″.26*, ″.1

No. 2448.

Marks, $\substack{32\ T_{16}\\ B\ T_{5}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000700	.000200	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.001050	.000200	0.	....	
7,000	35,000	.001200	.000150	0.	....	
8,000	40,000	.001400	.000200	0.	....	
9,000	45,000	.001600	.000200	....	....	
9,600	48,000	.001700	.000100	....	....	
9,800	49,000	.001750	.000050	....	....	Elastic limit.
10,000	50,000	.001950	.000200	....	....	
10,200	51,000	.002200	.000250	....	....	
10,400	52,000	.002550	.000350	....	....	
10,600	53,000	.003100	.000550	....	....	
10,800	54,000	.003650	.000550	....	....	
11,000	55,000	.004200	.000550	....	....	
11,200	56,000	.005250	.001050	....	....	
11,400	57,000	.006650	.001400	....	....	
11,600	58,000	.007750	.001100	....	....	
11,800	59,000	.008900	.001150	....	....	
12,000	60,000	.009900	.001000	....	....	
12,400	62,000	.012100	.002200	....	....	
12,800	64,000	.014100	.002000	....	....	
13,200	66,000	.016250	.002150	....	....	
13,600	68,000	.018400	.002150	....	....	
14,000	70,000	.020600	.002200	....	....	
14,400	72,000	.023500	.002900	....	....	
14,800	74,000	.026000	.002500	....	....	
15,200	76,000	.028750	.002750	....	....	
15,600	78,000	.032250	.003500	....	....	
16,000	80,000	.036400	.004150	....	....	
16,400	82,000	.040300	.003900	....	....	
16,800	84,000	.046000	.005700	....	....	
17,200	86,000	.052250	.006250	....	....	
17,600	88,000	.0600	.007750	....	....	
18,000	90,000	.0700	.0100	....	....	
18,020	90,100	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	90,100
Elastic limit per square inch of original section	do	49,000
Elongation per inch after rupture	inch	0.0750
Elongation per inch under strain at elastic limit	do	.001750
Reduction in diameter at point of rupture	do	.025
Reduction in area after rupture, per centum of original section		9.5
Position of rupture		at neck
Character of broken surface		granular; flaky spot at circumference
Elongation of inch sections		″.08, ″.0

No. 668.

Marks, $^{32\ T_{16}}_{B\ T_{6}}$
Length, 4″.004.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000067	.000067	0.	....	
5,000	10,000	.000200	.000133	0.	....	
7,500	15,000	.000333	.000133	0.	....	
10,000	20,000	.000500	.000167	— .000033	— .000033	
12,500	25,000	.000700	.000200	— .000067	— .000034	
15,000	30,000	.000867	.000167	— .000067	0.	
17,500	35,000	.001033	.000166	....	....	
20,000	40,000	.001233	.000200	....	....	
20,500	41,000	.001267	.000034	....	....	
21,000	42,000	.001300	.000033	....	....	
21,500	43,000	.001333	.000033	....	....	
22,000	44,000	.001367	.000034	....	....	
22,500	45,000	.001400	.000033	....	....	
23,000	46,000	.001433	.000033	....	....	
23,500	47,000	.001467	.000034	....	....	
24,000	48,000	.001500	.000033	....	....	Elastic limit.
24,500	49,000	.003467	.001967	....	....	
25,000	50,000	.003833	.000366	....	....	
25,500	51,000	.004800	.000967	....	....	
26,000	52,000	.005233	.000433	....	....	
45,600	91,200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	48,000
Compression per inch under stress at elastic limit	inch..	0.001500
Ultimate strength per square inch of original section	pounds..	91,200
Manner of failure		triple flexure

NEW TUBE No. 16.

No. 2674.

Marks, $^{32\,\mathrm{R}_{16}\,\mathrm{T}}_{\mathrm{B\,T}}$,
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000300	.000200	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000550	.000100	0.	....	
5, 000	25, 000	.000700	.000150	0.	....	
6, 000	30, 000	.000900	.000200	0.	....	
7, 000	35, 000	.001030	.000150	....	....	
8, 000	40, 000	.001200	.000150	....	....	
8, 200	41, 000	.001250	.000050	....	....	
8, 400	42, 000	.001300	.000050	....	....	
8, 600	43, 000	.001350	.000050	....	....	
8, 800	44, 000	.001350	0.	....	....	
9, 000	45, 000	.001400	.000050	....	....	
9, 200	46, 000	.001450	.000050	....	....	
9, 400	47, 000	.001500	.000050	....	....	Elastic limit.
9, 600	48, 000	.001750	.000250	....	....	
9, 800	49, 000	.002700	.000950	....	....	
10, 000	50, 000	.003850	.001150	....	....	
10, 200	51, 000	.004750	.000900	....	....	
10, 400	52, 000	.005500	.000750	....	....	
10, 600	53, 000	.006350	.000850	....	....	
10, 800	54, 000	.007300	.000950	....	....	
11, 000	55, 000	.008100	.000800	....	....	
11, 200	56, 000	.009000	.000900	....	....	
11, 400	57, 000	.009900	.000900	....	....	
11, 600	58, 000	.010850	.000950	....	....	
11, 800	59, 000	.011650	.000800	....	....	
12, 000	60, 000	.012650	.001000	....	....	
12, 400	62, 000	.014550	.001900	....	....	
12, 800	64, 000	.017000	.002450	....	....	
13, 200	66, 000	.019000	.002000	....	....	
13, 600	68, 000	.021150	.002150	....	....	
14, 000	70, 000	.023600	.002450	....	....	
14, 400	72, 000	.026500	.002900	....	....	
14, 800	74, 000	.029300	.002800	....	....	
15, 200	76, 000	.032250	.002950	....	....	
15, 600	78, 000	.036000	.003750	....	....	
16, 000	80, 000	.040250	.004250	....	....	
16, 400	82, 000	.0450	.004750	....	....	
16, 800	84, 000	.0525	.0075	....	....	
17, 200	86, 000	.0600	.0075	....	....	
17, 600	88, 000	.0750	.0150	....	....	
18, 000	90, 000	.0950	.0200	....	....	
18, 22C	91, 100	.1400	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	91, 100
Elastic limit per square inch of original section	do....	47, 000
Elongation per inch after rupture	inch..	0. 2050
Elongation per inch under strain at elastic limit	do...	.001500
Reduction in diameter at point of rupture	do...	.105
Reduction in area after rupture, per centum of original section		37. 1
Position of rupture		″.60 from neck
Character of broken surface		granular, 60 per centum; silky, 40 per centum
Elongation of inch sections		″.12, ″.29*

No. 2675.

Marks, $^{32}{}^{\mathrm{R.\ T}}_{\mathrm{B\ T.}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load
1,000	5,000	.000100	.000100	0.		
2,000	10,000	.000250	.000150	0.		
3,000	15,000	.000450	.000200	0.		
4,000	20,000	.000600	.000150	0.		
5,000	25,000	.000750	.000150	0.		
6,000	30,000	.000900	.000150	0.		
7,000	35,000	.001050	.000150			
8,000	40,000	.001200	.000150			
8,200	41,000	.001250	.000050			
8,400	42,000	.001300	.000050			
8,600	43,000	.001350	.000050			
8,800	44,000	.001350	0.			
9,000	45,000	.001400	.000050			
9,200	46,000	.001450	.000050			
9,400	47,000	.001500	.000050			Elastic limit.
9,600	48,000	.002100	.000600			
9,800	49,000	.003150	.001050			
10,000	50,000	.004550	.001400			
10,200	51,000	.005350	.000800			
10,400	52,000	.006150	.000800			
10,600	53,000	.007100	.000950			
10,800	54,000	.007900	.000800			
11,000	55,000	.008750	.000850			
11,200	56,000	.009550	.000800			
11,400	57,000	.010500	.000950			
11,600	58,000	.011400	.000900			
11,800	59,000	.012400	.001000			
12,000	60,000	.013300	.000900			
12,400	62,000	.016000	.002700			
12,800	64,000	.017900	.001900			
13,200	66,000	.019500	.001600			
13,600	68,000	.022100	.002600			
14,000	70,000	.024500	.002400			
14,400	72,000	.027000	.002500			
14,800	74,000	.030100	.003100			
15,200	76,000	.033500	.003400			
15,600	78,000	.037350	.003850			
16,000	80,000	.041500	.004150			
16,400	82,000	.047000	.005500			
16,800	84,000	.0550	.0080			
17,200	86,000	.0600	.0050			
17,600	88,000	.0800	.2000			
18,000	90,000	.1050	.0250			
18,150	90,750	.1550	.0500			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	90,750
Elastic limit per square inch of original section	do....	47,000
Elongation per inch after rupture..	inch..	0.2150
Elongation per inch under strain at elastic limit	do....	.001500
Reduction in diameter at point of rupture	do....	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		1 inch from neck
Character of broken surface		silky, 60 per centum; granular, 40 per centum
Elongation of inch sections		″.13, ″.30*

No. 702.

Marks, $\begin{smallmatrix}32 & R_{16} & T\\ B & T_{9} & \end{smallmatrix}$
Length, 4″.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000133	.000133	0.	....	
5,000	10,000	.000300	.000167	0.	....	
7,500	15,000	.000467	.000167	0.	....	
10,000	20,000	.000633	.000166	0.	....	
12,500	25,000	.000800	.000167	0.	....	
15,000	30,000	.000967	.000167	0.	....	
17,500	35,000	.001133	.000166	0.	....	
20,000	40,000	.001267	.000134	....	....	
20,500	41,000	.001300	.000033	....	....	
21,000	42,000	.001333	.000033	....	....	
21,500	43,000	.001367	.000034	....	....	
22,000	44,000	.001400	.000033	....	....	
22,500	45,000	.001433	.000033	....	....	
23,000	46,000	.001467	.000034	....	....	
23,500	47,000	.001500	.000033	....	....	Elastic limit.
24,000	48,000	.002500	.001000	....	....	
24,500	49,000	.003233	.000733	....	....	
25,000	50,000	.003733	.000500	....	....	
25,500	51,000	.004400	.000667	....	....	
26,000	52,000	.005333	.000933	....	....	
45,210	90,420	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	47,000
Compression per inch under stress at elastic limit	inch..	0.001500
Ultimate strength, per square inch of original section	pounds..	90,420
Manner of failure		triple flexure

No. 2676.

Marks, $\overset{32\ \text{R},\ \text{T}}{\text{M T}}$,
Diameter, ".504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000550	.000100	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001100	.000150	....	....	
8,000	40,000	.001300	.000200	....	....	
8,200	41,000	.001350	.000050	....	....	
8,400	42,000	.001400	.000050	....	....	
8,600	43,000	.001500	.000100	....	....	
8,800	44,000	.001550	.000050	....	....	
9,000	45,000	.001550	0.	....	....	
9,200	46,000	.001650	.000100	....	....	
9,400	47,000	.001800	.000150	....	....	Elastic limit.
9,600	48,000	.002400	.000600	....	....	
9,800	49,000	.003500	.001100	....	....	
10,000	50,000	.005050	.001550	....	....	
10,200	51,000	.006000	.000950	....	....	
10,400	52,000	.007000	.001000	....	....	
10,600	53,000	.008000	.001000	....	....	
10,800	54,000	.008900	.000900	....	....	
11,000	55,000	.010000	.001100	....	....	
11,200	56,000	.010600	.000600	....	....	
11,400	57,000	.011600	.001000	....	....	
11,600	58,000	.012600	.001000	....	....	
11,800	59,000	.013650	.001050	....	....	
12,000	60,000	.014800	.001150	....	....	
12,400	62,000	.017000	.002200	....	....	
12,800	64,000	.019500	.002500	....	....	
13,200	66,000	.022050	.002550	....	....	
13,600	68,000	.024550	.002500	....	....	
14,000	70,000	.027350	.002800	....	....	
14,400	72,000	.030850	.003500	....	....	
14,800	74,000	.034400	.003550	....	....	
15,200	76,000	.038750	.004350	....	....	
15,600	78,000	.043750	.005000	....	....	
16,000	80,000	.0500	.006250	....	....	
16,400	82,000	.0550	.0050	....	....	
16,800	84,000	.0650	.0100	....	....	
17,200	86,000	.0000	.0250	....	....	
17,430	87,150	.1350	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	87,150
Elastic limit per square inch of original section	do....	47,000
Elongation per inch after rupture	inch..	0.2400
Elongation per inch under strain at elastic limit	do....	.001800
Reduction in diameter at point of rupture	do....	.144
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		".11, ".37*

No. 702.

Marks, $\substack{32\ R_{16}\ T \\ B\ T_9}$
Length, 4″.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000133	.000133	0.		
5,000	10,000	.000300	.000167	0.		
7,500	15,000	.000467	.000167	0.		
10,000	20,000	.000633	.000166	0.		
12,500	25,000	.000800	.000167	0.		
15,000	30,000	.000967	.000167	0.		
17,500	35,000	.001133	.000166	0.		
20,000	40,000	.001267	.000134			
20,500	41,000	.001300	.000033			
21,000	42,000	.001333	.000033			
21,500	43,000	.001367	.000034			
22,000	44,000	.001400	.000033			
22,500	45,000	.001433	.000033			
23,000	46,000	.001467	.000034			
23,500	47,000	.001500	.000033			Elastic limit.
24,000	48,000	.002500	.001000			
24,500	49,000	.003233	.000733			
25,000	50,000	.003733	.000500			
25,500	51,000	.004400	.000667			
26,000	52,000	.005333	.000933			
45,210	90,420					Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds.	47,000
Compression per inch under stress at elastic limit ....inch..	0.001500
Ultimate strength, per square inch of original section ....pounds..	90,420
Manner of failure	triple flexure

No. 2676.

Marks, $\overset{32\ B_{16}\ T}{M\ T}$,
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000550	.000100	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001100	.000150	....	....	
8,000	40,000	.001300	.000200	....	....	
8,200	41,000	.001350	.000050	....	....	
8,400	42,000	.001400	.000050	....	....	
8,600	43,000	.001500	.000100	....	....	
8,800	44,000	.001550	.000050	....	....	
9,000	45,000	.001550	0.	....	....	
9,200	46,000	.001650	.000100	....	....	
9,400	47,000	.001800	.000150	....	....	Elastic limit.
9,600	48,000	.002400	.000600	....	....	
9,800	49,000	.003500	.001100	....	....	
10,000	50,000	.005050	.001550	....	....	
10,200	51,000	.006000	.000950	....	....	
10,400	52,000	.007000	.001000	....	....	
10,600	53,000	.008000	.001000	....	....	
10,800	54,000	.008900	.000900	....	....	
11,000	55,000	.010000	.001100	....	....	
11,200	56,000	.010600	.000600	....	....	
11,400	57,000	.011600	.001000	....	....	
11,600	58,000	.012600	.001000	....	....	
11,800	59,000	.013650	.001050	....	....	
12,000	60,000	.014800	.001150	....	....	
12,400	62,000	.017000	.002200	....	....	
12,800	64,000	.019500	.002500	....	....	
13,200	66,000	.022050	.002550	....	....	
13,600	68,000	.024550	.002500	....	....	
14,000	70,000	.027350	.002800	....	....	
14,400	72,000	.030850	.003500	....	....	
14,800	74,000	.034400	.003550	....	....	
15,200	76,000	.038750	.004350	....	....	
15,600	78,000	.043750	.005000	....	....	
16,000	80,000	.0500	.006250	....	....	
16,400	82,000	.0550	.0050	....	....	
16,800	84,000	.0650	.0100	....	....	
17,200	86,000	.0900	.0250	....	....	
17,430	87,150	.1350	.0150	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	87,150
Elastic limit per square inch of original section	do....	47,000
Elongation per inch after rupture	inch..	0.2400
Elongation per inch under strain at elastic limit	do....	.001800
Reduction in diameter at point of rupture	do....	.144
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.11, ″.37*

No. 2677.

Marks, $^{32\ R_{16}\ T}_{M\ T_4}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.0C0100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000550	.000100	0.	....	
5,000	25,000	.000800	.000250	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001050	.000100	0.	....	
8,000	40,000	.001250	.000200	0.	....	
8,200	41,000	.001300	.000050	....	....	
8,400	42,000	.001350	.000050	....	....	
8,600	43,000	.001450	.000100	....	....	
8,800	44,000	.001500	.000050	....	....	
9,000	45,000	.001650	.000150	....	....	Elastic limit.
9,200	46,000	.002700	.001050	....	....	
9,400	47,000	.003600	.000900	....	....	
9,600	48,000	.005000	.001400	....	....	
9,800	49,000	.006100	.001100	....	....	
10,000	50,000	.007100	.001000	....	....	
10,200	51,000	.008000	.000900	....	....	
10,400	52,000	.008800	.000800	....	....	
10,600	53,000	.009850	.001050	....	....	
10,800	54,000	.011000	.001150	....	....	
11,000	55,000	.011750	.000750	....	....	
11,200	56,000	.012650	.000900	....	....	
11,400	57,000	.014000	.001350	....	....	
11,600	58,000	.015000	.001000	....	....	
11,800	59,000	.016250	.001250	....	....	
12,000	60,000	.017200	.000950	....	....	
12,400	62,000	.019750	.002550	....	....	
12,800	64,000	.022100	.002350	....	....	
13,200	66,000	.025050	.002950	....	....	
13,600	68,000	.027900	.002850	....	....	
14,000	70,000	.031500	.003600	....	....	
14,400	72,000	.035600	.004100	....	....	
14,800	74,000	.039750	.004150	....	....	
15,200	76,000	.045250	.005500	....	....	
15,600	78,000	.0550	.009750	....	....	
16,000	80,000	.0625	.0075	....	....	
16,400	82,000	.0750	.0125	....	....	
16,800	84,000	.0950	.0200	....	....	
17,010	85,050	.1350	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	85,050
Elastic limit per square inch of original section	do	45,000
Elongation per inch after rupture	inch	0.2150
Elongation per inch under strain at elastic limit	do	.001650
Reduction in diameter at point of rupture	do	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		⅛ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.32*, ″.11

No. 2234.

Marks, $\frac{32\ T_{17}}{B\ T_{1}}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.		
2, 000	10, 000	.000300	.000200	0.		
3, 000	15, 000	.000400	.000100	0.		
4, 000	20, 000	.000550	.000150	0.		
5, 000	25, 000	.000750	.000200	0.		
6, 000	30, 000	.000950	.000200	0.		
7, 000	35, 000	.001150	.000200	0.		
8, 000	40, 000	.001300	.000150	0.		
9, 000	45, 000	.001500	.000200	0.		
9, 200	46, 000	.001550	.000050			
9, 400	47, 000	.001650	.000100			
9, 600	48, 000	.001650	0.			
9, 800	49, 000	.001750	.000100			Elastic limit.
10, 000	50, 000	.001950	.000200			
10, 200	51, 000	.003700	.001750			
10, 400	52, 000	.005600	.001900			
10, 600	53, 000	.006700	.001100			
10, 800	54, 000	.007850	.001150			
11, 000	55, 000	.008900	.001050			
11, 200	56, 000	.010000	.001100			
11, 400	57, 000	.011150	.001150			
11, 600	58, 000	.012250	.001100			
11, 800	59, 000	.013550	.001300			
12, 000	60, 000	.014750	.001200			
12, 400	62, 000	.017550	.002800			
12, 800	64, 000	.020250	.002700			
13, 200	66, 000	.023200	.002950			
13, 600	68, 000	.026200	.003000			
14, 000	70, 000	.029750	.003550			
14, 400	72, 000	.033600	.003750			
14, 800	74, 000	.038000	.004500			
15, 200	76, 000	.043500	.005500			
15, 600	78, 000	.051000	.007500			
16, 000	80, 000	.050000	.008000			
16, 400	82, 000	.0750	.0160			
16, 800	84, 000	.0950	.0200			
16, 920	84, 600	.1350	.4000			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	84, 600
Elastic limit per square inch of original section	do....	49, 000
Elongation per inch after rupture	inch..	0. 2350
Elongation per inch under strain at elastic limit	do....	.001750
Reduction in diameter at point of rupture	do....	.114
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		″.80 from neck
Character of broken surface		granular, 50 per centum; dull, silky, 50 per centum
Elongation of inch sections		″.32*, ″.15

No. 2235.

Marks, $^{32\ T_{17}}_{B\ T_{2}}$

Diameter, ″.505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000600	.000200	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000900	.000150	0.	....	
7, 000	35, 000	.001100	.000200	0.	....	
8, 000	40, 000	.001300	.000200	0.	....	
9, 000	45, 000	.001450	.000150	0.	....	
9, 200	46, 000	.001500	.000050	....	....	
9, 400	47, 000	.001550	.000050	....	....	
9, 600	48, 000	.001600	.000050	....	....	
9, 800	49, 000	.001650	.000050	....	....	Elastic limit.
10, 000	50, 000	.002850	.001200	....	....	
10, 200	51, 000	.005100	.002250	....	....	
10, 400	52, 000	.007000	.001900	....	....	
10, 600	53, 000	.008100	.001100	....	....	
10, 800	54, 000	.008750	.000650	....	....	
11, 000	55, 000	.009600	.000850	....	....	
11, 200	56, 000	.010600	.001000	....	....	
11, 400	57, 000	.011850	.001250	....	....	
11, 600	58, 000	.013100	.001250	....	....	
11, 800	59, 000	.014650	.001550	....	....	
12, 000	60, 000	.016250	.001600	....	....	
12, 400	62, 000	.018750	.002500	....	....	
12, 800	64, 000	.021500	.002750	....	....	
13, 200	66, 000	.024600	.003100	....	....	
13, 600	68, 000	.027750	.003150	....	....	
14, 000	70, 000	.031750	.004000	....	....	
14, 400	72, 000	.035750	.004000	....	....	
14, 800	74, 000	.041250	.005500	....	....	
15, 200	76, 000	.047000	.005750	....	....	
15, 600	78, 000	.055000	.008000	....	....	
16, 000	80, 000	.0650	.0100	....	....	
16, 400	82, 000	.0900	.0250	....	....	
16, 570	82, 850	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	82, 850
Elastic limit per square inch of original section	do	49, 000
Elongation per inch after rupture	inch	0. 2150
Elongation per inch under strain at elastic limit	do	.001650
Reduction in diameter at point of rupture	do	.115
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		¾ inch from neck
Character of broken surface		silky, 90 per centum; granular, 10 per centum
Elongation of inch sections		″.30*, ″.13

No. 621.

Marks, $\frac{32\,T_{17}}{B\,T_{2}}$
Length, 3''.999.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000200	.000200	0.	....	
5, 000	10, 000	.000400	.000200	0.	....	
7, 500	15, 000	.000550	.000150	0.	....	
10, 000	20, 000	.000750	.000200	0.	....	
12, 500	25, 000	.000950	.000200	0.	....	
15, 000	30, 000	.001100	.000150	0.	....	
17, 500	35, 000	.001300	.000200	.000050	.000050	
20, 000	40, 000	.001500	.000200	.000050	0.	
20, 500	41, 000	.001500	0.	....	....	
21, 000	42, 000	.001550	.000050	....	....	
21, 500	43, 000	.001600	.000050	....	....	
22, 000	44, 000	.001650	.000050	....	....	
22, 500	45, 000	.001700	.000050	.000050	0.	
23, 000	46, 000	.001750	.000050	....	....	
23, 500	47, 000	.001700	.000050	....	....	
24, 000	48, 000	.001750	.000050	....	....	Elastic limit.
24, 500	49, 000	.002000	.000250	....	....	
25, 000	50, 000	.003000	.001000	.001300	.001250	
25, 500	51, 000	.004300	.001800	....	....	
26, 000	52, 000	.006200	.001900	....	....	
26, 500	53, 000	.007000	.000800	....	....	
27, 000	54, 000	.008000	.001000	....	....	
27, 500	55, 000	.008950	.000950	.006900	.005600	
44, 400	88, 800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds.. 48, 000
Compression per inch under stress at elastic limit..inch.. 0. 001750
Ultimate strength per square inch of original section..................................pounds.. 88, 800
Manner of failure .... triple flexure

No. 2236.

Marks, $\genfrac{}{}{0pt}{}{32\ T_{17}}{M\ T_{1}}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001400	.000300	.000050	.000050	
8,200	41,000	.001450	.000050	....	....	
8,400	42,000	.001500	.000050	....	....	
8,600	43,000	.001550	.000050	....	....	
8,800	44,000	.001600	.000050	....	....	Elastic limit.
9,000	45,000	.003150	.001550	....	....	
9,200	46,000	.003700	.000550	....	....	
9,400	47,000	.004650	.000950	....	....	
9,600	48,000	.006650	.002000	....	....	
9,800	49,000	.007750	.001100	....	....	
10,000	50,000	.008950	.001200	....	....	
10,200	51,000	.010000	.001050	....	....	
10,400	52,000	.011050	.001050	....	....	
10,600	53,000	.012050	.001000	....	....	
10,800	54,000	.013100	.001050	....	....	
11,000	55,000	.014250	.001150	....	....	
11,200	56,000	.015350	.001100	....	....	
11,400	57,000	.016600	.001250	....	....	
11,600	58,000	.018250	.001650	....	....	
11,800	59,000	.019500	.001250	....	....	
12,000	60,000	.020850	.001350	....	....	
12,400	62,000	.024000	.003150	....	....	
12,800	64,000	.026850	.002850	....	....	
13,200	66,000	.030150	.003300	....	....	
13,600	68,000	.034000	.003850	....	....	
14,000	70,000	.038500	.004500	....	....	
14,400	72,000	.044250	.005750	....	....	
14,800	74,000	.050600	.006350	....	....	
15,200	76,000	.059000	.008400	....	....	
15,600	78,000	.0800	.0210	....	....	
16,000	80,000	.0950	.0150	....	....	
16,250	81,250	.1350	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	81,250
Elastic limit per square inch of original section	do	44,000
Elongation per inch after rupture	inch	0.2150
Elongation per inch under strain at elastic limit	do	.001600
Reduction in diameter at point of rupture	do	.124
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		⅜ inch from neck
Character of broken surface		silky; slightly granular
Elongation of inch sections		″.31*, ″.12

No. 2237.

Marks, $\begin{smallmatrix}32\ T_{17}\\ M\ T_{2}\end{smallmatrix}$.
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	.000000	.000000	
2,000	10,000	.000400	.000250	.000050	.000050	
3,000	15,000	.000600	.000200	.000050	0.	
4,000	20,000	.000800	.000200	.000050	0.	
5,000	25,000	.000950	.000150	.000050	0.	
6,000	30,000	.001100	.000150	.000050	0.	
7,000	35,000	.001300	.000200	.000050	0.	
8,000	40,000	.001550	.000250	.000100	.000050	
9,000	45,000	.001700	.000150	.000100	0.	Elastic limit.
9,200	46,000	.002500	.000800	....	....	
9,400	47,000	.003750	.001250	....	....	
9,600	48,000	.006250	.002500	....	....	
9,800	49,000	.007500	.001250	....	....	
10,000	50,000	.008750	.001250	....	....	
10,200	51,000	.009500	.000750	....	....	
10,400	52,000	.010500	.001000	....	....	
10,600	53,000	.011400	.000900	....	....	
10,800	54,000	.012300	.000900	....	....	
11,000	55,000	.013750	.001450	....	....	
11,200	56,000	.015100	.001350	....	....	
11,400	57,000	.016250	.001150	....	....	
11,600	58,000	.017350	.001100	....	....	
11,800	59,000	.018800	.001450	....	....	
12,000	60,000	.020850	.002050	....	....	
12,400	62,000	.023000	.002150	....	....	
12,800	64,000	.026100	.003100	....	....	
13,200	66,000	.029650	.003550	....	....	
13,600	68,000	.033750	.004100	....	....	
14,000	70,000	.038000	.004250	....	....	
14,400	72,000	.043750	.005750	....	....	
14,800	74,000	.050250	.006500	....	....	
15,200	76,000	.0600	.009750	....	....	
15,600	78,000	.0800	.0200	....	....	
16,000	80,000	.1000	.0200	....	....	
16,190	80,950	.1350	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80,950
Elastic limit per square inch of original section	do....	45,000
Elongation per inch after rupture	inch..	0.2250
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.134
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		″.65 from neck
Character of broken surface		silky; slightly granular
Elongation of inch sections		″.35*, ″.10

No. 2264.

Marks, $\frac{32\ T_{18}}{B\ T_{1}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000550	.000200	0.	....	
4,000	20,000	.000700	.000150	0.	....	
5,000	25,000	.000900	.000200	0.	....	
6,000	30,000	.001050	.000150	0.	....	
7,000	35,000	.001200	.000150	0.	....	
8,000	40,000	.001400	.000200	0.	....	
9,000	45,000	.001550	.000150	0.	....	
9,200	46,000	.001600	.000050	....	....	
9,400	47,000	.001700	.000100	....	....	
9,600	48,000	.001950	.000250	....	....	Elastic limit.
9,800	49,000	.001950	0.	....	....	
10,000	50,000	.003000	.001050	....	....	
10,200	51,000	.004100	.001100	....	....	
10,400	52,000	.005600	.001500	....	....	
10,600	53,000	.006800	.001200	....	....	
10,800	54,000	.008050	.001250	....	....	
11,000	55,000	.009050	.001000	....	....	
11,200	56,000	.010000	.000950	....	....	
11,400	57,000	.011050	.001050	....	....	
11,600	58,000	.012050	.001000	....	....	
11,800	59,000	.013050	.001000	....	....	
12,000	60,000	.014000	.000950	....	....	
12,400	62,000	.016050	.002050	....	....	
12,800	64,000	.018350	.002300	....	....	
13,200	66,000	.021000	.002650	....	....	
13,600	68,000	.023550	.002550	....	....	
14,000	70,000	.027000	.003450	....	....	
14,400	72,000	.030100	.003100	....	....	
14,800	74,000	.033100	.003000	....	....	
15,200	76,000	.037800	.004700	....	....	
15,600	78,000	.042250	.004450	....	....	
16,000	80,000	.048050	.005800	....	....	
16,400	82,000	.056000	.007950	....	....	
16,800	84,000	.0650	.0090	....	....	
17,200	86,000	.0850	.0200	....	....	
17,520	87,600	.1300	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	87,600
Elastic limit per square inch of original section	do....	48,000
Elongation per inch after rupture	inch..	0.2100
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		″.55 from neck
Character of broken surface		silky, with fine granulation at circumference
Elongation of inch sections		″.31*, ″.11

No. 2265.

Marks, $^{32}_{B}{}^{T_{18}}_{T_{3}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	....	....	
2,000	10,000	.000250	.000150	....	....	
3,000	15,000	.000450	.000200	....	....	
4,000	20,000	.000550	.000100	....	....	
5,000	25,000	.000750	.000200	....	....	
6,000	30,000	.000900	.000150	....	....	
7,000	35,000	.001050	.000150	....	....	
8,000	40,000	.001200	.000150	....	....	
9,000	45,000	.001350	.000150	....	....	
9,200	46,000	.001400	.000050	....	....	
9,400	47,000	.001450	.000050	....	....	
9,600	48,000	.001500	.000050	....	....	
9,800	49,000	.001600	.000100	....	....	
10,000	50,000	.001700	.000100	....	....	Elastic limit.
10,200	51,000	.002250	.000550	....	....	
10,400	52,000	.002850	.000600	....	....	
10,600	53,000	.003300	.000450	....	....	
10,800	54,000	.004600	.001300	....	....	
11,000	55,000	.006200	.001600	....	....	
11,200	56,000	.007500	.001300	....	....	
11,400	57,000	.008750	.001250	....	....	
11,600	58,000	.009600	.000850	....	....	
11,800	59,000	.010300	.000700	....	....	
12,000	60,000	.011200	.000900	....	....	
12,400	62,000	.013750	.002550	....	....	
12,800	64,000	.015650	.001900	....	....	
13,200	66,000	.018150	.002500	....	....	
13,600	68,000	.020750	.002600	....	....	
14,000	70,000	.023500	.002750	....	....	
14,400	72,000	.026750	.003250	....	....	
14,800	74,000	.029350	.002600	....	....	
15,200	76,000	.032800	.003450	....	....	
15,600	78,000	.036900	.004100	....	....	
16,000	80,000	.041500	.004600	....	....	
16,400	82,000	.048750	.007250	....	....	
16,800	84,000	.055000	.006250	....	....	
17,200	86,000	.0700	.0150	....	....	
17,600	88,000	.0850	.0150	....	....	
17,840	89,200	.1200	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	89,200
Elastic limit per square inch of original section	do....	50,000
Elongation per inch after rupture	inch..	0.1850
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.105
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		⅜ inch from neck
Character of broken surface		granular; dull center
Elongation of inch sections		″.26*, ″.11

No. 632.

Marks, $\frac{32\ T_{18}}{B\ T_{3}}$
Length, 4''.004.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000200	.000200	0.	....	
5,000	10,000	.000400	.000200	0.	....	
7,500	15,000	.000600	.000200	.000050	....	
10,000	20,000	.000750	.000150	.000050	....	
12,500	25,000	.000900	.000150	.000100	....	
15,000	30,000	.001100	.000200	.000100	....	
17,500	35,000	.001300	.000200	.000150	....	
20,000	40,000	.001500	.000200	.000250	....	
20,500	41,000	.001550	.000050	....	....	
21,000	42,000	.001650	.000100	....	....	
21,500	43,000	.001750	.000100	....	....	
22,000	44,000	.001850	.000100	....	....	
22,500	45,000	.002000	.000150	.000400	.000150	
23,000	46,000	.002150	.000150	....	....	Elastic limit.
23,500	47,000	.002450	.000300	....	....	
24,000	48,000	.003450	.001000	....	....	
24,500	49,000	.005200	.001750	....	....	
25,000	50,000	.008200	.003000	....	....	
44,700	89,400	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section........pounds..	46,000
Compression per inch under stress at elastic limit........inch..	0.002150
Ultimate strength per square inch of original section........pounds..	89,400
Manner of failure........	triple flexure

No. 2266.

Marks, $\genfrac{}{}{0pt}{}{32\ T_{18}}{M\ T_{1}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000450	.000250	0.	....	
4,000	20,000	.000550	.000100	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000950	.000250	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001300	.000200	0.	....	Elastic limit.
8,200	41,000	.001350	.000050	....	....	
8,400	42,000	.003400	.002050	....	....	
8,600	43,000	.003900	.000500	....	....	
8,800	44,000	.004800	.000900	....	....	
9,000	45,000	.006250	.001450	....	....	
9,200	46,000	.007550	.001300	....	....	
9,400	47,000	.008750	.001200	....	....	
9,600	48,000	.010150	.001400	....	....	
9,800	49,000	.011550	.001400	....	....	
10,000	50,000	.012500	.000950	....	....	
10,200	51,000	.013500	.001000	....	....	
10,400	52,000	.014350	.000850	....	....	
10,600	53,000	.015600	.000250	....	....	
10,800	54,000	.016500	.000900	....	....	
11,000	55,000	.017700	.001200	....	....	
11,200	56,000	.019050	.001350	....	....	
11,400	57,000	.020150	.001100	....	....	
11,600	58,000	.021550	.001400	....	....	
11,800	59,000	.023050	.001500	....	....	
12,000	60,000	.024600	.001550	....	....	
12,400	62,000	.028500	.003900	....	....	
12,800	64,000	.031750	.003250	....	....	
13,200	66,000	.036100	.004350	....	....	
13,600	68,000	.040600	.004500	....	....	
14,000	70,000	.046250	.005650	....	....	
14,400	72,000	.054500	.008250	....	....	
14,800	74,000	.0600	.0055	....	....	
15,200	76,000	.0700	.0100	....	....	
15,600	78,000	.1000	.0300	....	....	
15,850	79,250	.1400	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..pounds.. 79,250
Elastic limit per square inch of original section..do.... 45,000
Elongation per inch after rupture..inch.. 0.2050
Elongation per inch under strain at elastic limit..do.... .001350
Reduction in diameter at point of rupture..do.... .125
Reduction in area after rupture, per centum of original section.. 43.3
Position of rupture..″.40 from neck
Character of broken surface..granular; dull center
Elongation of inch sections..′.32*, ″.09

No. 2267.

Marks, $\begin{smallmatrix}32\,T_{18}\\ M\,T_{2}\end{smallmatrix}$

Diameter, ".504.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001000	.000150	0.	....	
8,000	40,000	.001150	.000150	0.	....	
8,200	41,000	.001200	.000050	....	....	
8,400	42,000	.001200	0.	....	....	
8,600	43,000	.001250	.000050	....	....	
8,800	44,000	.001300	.000050	....	....	Elastic limit.
9,000	45,000	.001550	.000250	....	....	
9,200	46,000	.002400	.000850	....	....	
9,400	47,000	.003550	.001150	....	....	
9,600	48,000	.004250	.000700	....	....	
9,800	49,000	.005000	.000750	....	....	
10,000	50,000	.006200	.001200	....	....	
10,200	51,000	.007500	.001300	....	....	
10,400	52,000	.009000	.001500	....	....	
10,600	53,000	.009900	.000900	....	....	
10,800	54,000	.010700	.000800	....	....	
11,000	55,000	.011750	.001050	....	....	
11,200	56,000	.013000	.001250	....	....	
11,400	57,000	.014150	.001150	....	....	
11,600	58,000	.015050	.000900	....	....	
11,800	59,000	.016600	.001550	....	....	
12,000	60,000	.018250	.001650	....	....	
12,400	62,000	.020750	.002500	....	....	
12,800	64,000	.023400	.002650	....	....	
13,200	66,000	.027000	.003600	....	....	
13,600	68,000	.030600	.003600	....	....	
14,000	70,000	.034350	.003750	....	....	
14,400	72,000	.039000	.004650	....	....	
14,800	74,000	.044750	.005750	....	....	
15,200	76,000	.051100	.006350	....	....	
15,600	78,000	.0600	.0089	....	....	
16,000	80,000	.0700	.0100	....	....	
16,400	82,000	.1000	.0300	....	....	
16,480	82,400	.1350	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	82,400
Elastic limit per square inch of original section	do	44,000
Elongation per inch after rupture	inch	0.2050
Elongation per inch under strain at elastic limit	do	.001300
Reduction in diameter at point of rupture	do	.144
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		¼ inch from neck
Character of broken surface		silky
Elongation of inch sections		".32*, ".09

No. 1184.

Marks, $\substack{32\ T_{19}\\ B\ T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001250	.000150	0.	....	
9,000	45,000	.001450	.000200	.000050	....	
9,200	46,000	.001450	0.	....	....	
9,400	47,000	.001500	.000050	....	....	
9,600	48,000	.001550	.000050	....	....	
9,800	49,000	.001600	.000050	....	....	
10,000	50,000	.001650	.000050	.000050	0.	
10,200	51,000	.001700	.000050	....	....	
10,400	52,000	.001750	.000050	....	....	Elastic limit.
10,600	53,000	.007500	.005750	....	....	
10,800	54,000	.008250	.000750	....	....	
11,000	55,000	.009600	.001350	.007400	.007350	
11,200	56,000	.010150	.000550	....	....	
11,400	57,000	.010850	.000700	....	....	
11,600	58,000	.011950	.001100	....	....	
11,800	59,000	.013100	.001150	....	....	
12,000	60,000	.014250	.001150	.011850	.004450	
12,400	62,000	.016500	.002250	....	....	
12,800	64,000	.018650	.002150	....	....	
13,200	66,000	.021650	.003000	....	....	
13,600	68,000	.024950	.003300	....	....	
14,000	70,000	.027650	.002700	....	....	
14,400	72,000	.031500	.003850	....	....	
14,800	74,000	.035000	.003500	....	....	
15,200	76,000	.039300	.004300	....	....	
15,600	78,000	.045100	.005800	....	....	
16,000	80,000	.051550	.006450	....	....	
16,400	82,000	.059600	.008050	....	....	
16,800	84,000	.070000	.010400	....	....	
17,200	86,000	.092000	.022000	....	....	
17,490	87,450	.1450	.0530	....	....	Tensile strength.

General summary.

Specific gravity		7.8767
Tensile strength per square inch of original section	pounds..	87,450
Elastic limit per square inch of original section	do....	52,000
Elongation per inch after rupture	inch..	0.2300
Elongation per inch under strain at elastic limit	do....	.001750
Reduction in diameter at point of rupture	do....	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		″.55 from neck
Character of broken surface		silky
Elongation of inch sections		″.32*, ″.14

No. 1185.

Marks, $\frac{32\ T_1}{B\ T_2}$.
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000650	.000200	0.	....	
5, 000	25, 000	.000850	.000200	0.	....	
6, 000	30, 000	.001050	.000200	0.	....	
7, 000	35, 000	.001200	.000150	0.	....	
8, 000	40, 000	.001450	.000250	.000050	.000050	
9, 000	45, 000	.001600	.000150	.000050	0.	
10, 000	50, 000	.001800	.000200	.000100	.000050	Elastic limit.
10, 200	51, 000	.002950	.001150	....	....	
10, 400	52, 000	.003400	.000450	....	....	
10, 600	53, 000	.006650	.003250	....	....	
10, 800	54, 000	.008200	.001550	....	....	
11, 000	55, 000	.009450	.001250	.007250	.007150	
11, 200	56, 000	.010100	.000650	....	....	
11, 400	57, 000	.010750	.000650	....	....	
11, 600	58, 000	.011750	.001000	....	....	
11, 800	59, 000	.013050	.001300	....	....	
12, 000	60, 000	.014250	.001200	.011700	.004450	
12, 400	62, 000	.016250	.002000	....	....	
12, 800	64, 000	.018500	.002250	....	....	
13, 200	66, 000	.021550	.003050	....	....	
13, 600	68, 000	.024550	.003000	....	....	
14, 000	70, 000	.027550	.003000	....	....	
14, 400	72, 000	.030750	.003200	....	....	
14, 800	74, 000	.035250	.004500	....	....	
15, 200	76, 000	.039000	.003750	....	....	
15, 600	78, 000	.044050	.005050	....	....	
16, 000	80, 000	.051500	.007450	....	....	
16, 400	82, 000	.059000	.007500	....	....	
16, 800	84, 000	.070000	.011000	....	....	
17, 200	86, 000	.090000	.020000	....	....	
17, 490	87, 450	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	87, 450
Elastic limit per square inch of original section	do....	50, 000
Elongation per inch after rupture	inch..	0. 2150
Elongation per inch under strain at elastic limit	do....	.001800
Reduction in diameter at point of rupture	do....	.124
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		½ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.30*, ″.13

No. 565.

Marks, $\frac{32T_{19}}{B\ T_2}$
Length, 3″.993.
Diameter, ″.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000400	.000150	0.	....	
10,000	20,000	.000550	.000150	0.	....	
12,500	25,000	.000800	.000150	0.	....	
15,000	30,000	.000950	.000150	0.	....	
17,500	35,000	.001100	.000150	0.	....	
20,000	40,000	.001250	.000150	0.	....	
22,500	45,000	.001300	.000050	0.	....	
23,000	46,000	.001350	.000050	....	....	
23,500	47,000	.001400	.000050	....	....	
24,000	48,000	.001450	.000050	....	....	
24,500	49,000	.001450	0.	....	....	
25,000	50,000	.001500	.000050	0.	....	
25,500	51,000	.001550	.000050	....	....	
26,000	52,000	.001550	0.	....	....	Elastic limit.
26,500	53,000	.005100	.003550	....	....	
27,000	54,000	.005400	.000300	....	....	
27,500	55,000	.006100	.000700	.004250	.004250	
45,450	90,900	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section....................................pounds.. 52,000
Compression per inch under stress at elastic limit....................................inch.. 0.001550
Ultimate strength per square inch of original section....................................pounds.. 90,900
Manner of failure..triple flexure

No. 1186.

Marks, $^{32}_{M}{}^{T_{19}}_{T_{1}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000350	.000100	0.	....	
4,000	20,000	.000500	.000150	0.	....	
5,000	25,000	.000700	.000200	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001050	.000200	0.	....	
8,000	40,000	.001250	.000200	0.	....	
9,000	45,000	.001400	.000150	....	....	
9,600	48,000	.001500	.000100	....	....	Elastic limit.
9,800	49,000	.001800	.000300	....	....	
10,000	50,000	.005150	.003350	.003250	.003250	
10,200	51,000	.006200	.001050	....	....	
10,400	52,000	.007000	.000800	....	....	
10,600	53,000	.007900	.000900	....	....	
10,800	54,000	.009100	.001200	....	....	
11,000	55,000	.009600	.000500	.007400	.004150	
11,200	56,000	.011200	.001600	....	....	
11,400	57,000	.011750	.000550	....	....	
11,600	58,000	.012450	.000700	....	....	
11,800	59,000	.013600	.001150	....	....	
12,000	60,000	.014250	.000650	.011900	.004500	
12,400	62,000	.016500	.002250	....	....	
12,800	64,000	.018600	.002100	....	....	
13,200	66,000	.021750	.003150	....	....	
13,600	68,000	.025000	.003250	....	....	
14,000	70,000	.027300	.002300	....	....	
14,400	72,000	.030150	.002850	....	....	
14,800	74,000	.034500	.004350	....	....	
15,200	76,000	.037500	.003000	....	....	
15,600	78,000	.042500	.005000	....	....	
16,000	80,000	.047450	.004950	....	....	
16,400	82,000	.053500	.006050	....	....	
16,800	84,000	.062500	.009000	....	....	
17,200	86,000	.075000	.012500	....	....	
17,600	88,000	.102500	.027500	....	....	
17,740	88,700	.137500	.035000	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	88,700
Elastic limit per square inch of original section	do	48,000
Elongation per inch after rupture	inch	0.2400
Elongation per inch under strain at elastic limit	do	.001500
Reduction in diameter at point of rupture	do	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		⅜ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.35*, ″.13

No. 1187.

Marks, $\substack{32\ T_{19} \\ M\ T_{2}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001150	.000200	0.	....	
8,000	40,000	.001250	.000100	0.	....	
9,000	45,000	.001400	.000150	....	....	
9,200	46,000	.001400	0.	....	....	
9,400	47,000	.001450	.000050	....	....	
9,600	48,000	.001550	.000100	....	....	
9,800	49,000	.001600	.000050	....	....	
10,000	50,000	.001650 .002450	.000050 .000800	.... .000850	.... .000850	Elastic limit.
10,200	51,000	.004750	.002300	....	....	
10,400	52,000	.006000	.001250	....	....	
10,600	53,000	.007150	.001150	....	....	
10,800	54,000	.007750	.000600	....	....	
11,000	55,000	.008600	.000850	.006400	.005550	
11,200	56,000	.009350	.000750	....	....	
11,400	57,000	.009950	.000600	....	....	
11,600	58,000	.011150	.001200	....	....	
11,800	59,000	.012150	.001000	....	....	
12,000	60,000	.013100	.000950	.010850	.004450	
12,400	62,000	.015100	.002000	....	....	
12,800	64,000	.017300	.002200	....	....	
13,200	66,000	.019950	.002650	....	....	
13,600	68,000	.022500	.002550	....	....	
14,000	70,000	.025500	.003000	....	....	
14,400	72,000	.028500	.003000	....	....	
14,800	74,000	.032000	.003500	....	....	
15,200	76,000	.035500	.003500	....	....	
15,600	78,000	.040000	.004500	....	....	
16,000	80,000	.045000	.005000	....	....	
16,400	82,000	.051500	.006500	....	....	
16,800	84,000	.059250	.007750	....	....	
17,200	86,000	.069750	.010500	....	....	
17,600	88,000	.087000	.017250	....	....	
17,890	89,450	.1400	.0530	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	89,450
Elastic limit per square inch of original section	do....	50,000
Elongation per inch after rupture	inch..	0.2350
Elongation per inch under strain at elastic limit	do....	.001650
Reduction in diameter at point of rupture	do....	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		″.65 from neck
Character of broken surface		silky; traces of granulation
Elongation of inch sections		″.32*, ″.15

No. 1180.

Marks, $^{32\,T_{20}}_{B\,T_1}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000700	.000100	0.	....	
6, 000	30, 000	.000900	.000200	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001200	.000150	0.	....	
9, 000	45, 000	.001350	.000150	0.	....	
10, 000	50, 000	.001550	.000200	0.	....	Elastic limit.
10, 200	51, 000	.001700	.000150	....	....	
10, 400	52, 000	.002000	.000300	....	....	
10, 600	53, 000	.002300	.000300	....	....	
10, 800	54, 000	.002850	.000550	....	....	
11, 000	55, 000	.004050	.001200	.002050	.002050	
11, 200	56, 000	.005600	.001550	....	....	
11, 400	57, 000	.006650	.001050	....	....	
11, 600	58, 000	.007800	.001150	....	....	
11, 800	59, 000	.008900	.001100	....	....	
12, 000	60, 000	.009950	.001050	.007650	.005600	
12, 400	62, 000	.012000	.002050	....	....	
12, 800	61, 000	.014550	.002550	....	....	
13, 200	66, 000	.017350	.002800	....	....	
13, 600	68, 000	.019550	.002200	....	....	
14, 000	70, 000	.022300	.002750	....	....	
14, 400	72, 000	.025750	.003450	....	....	
14, 800	74, 000	.028250	.002500	....	....	
15, 200	76, 000	.032250	.004000	....	....	
15, 600	78, 000	.036000	.003750	....	....	
16, 000	80. 000	.042000	.006000	....	....	
16, 400	82, 000	.047000	.005000	....	....	
16, 800	84, 000	,054500	.007500	....	....	
17, 200	86, 000	.065750	.011250	....	....	
17, 600	88, 000	.086000	.020250	....	....	
17, 700	88, 500	.1175	.0315	....	....	Tensile strength.

General summary.

Specific gravity		7. 8665
Tensile strength per square inch of original section	pounds..	88, 500
Elastic limit per square inch of original section	do....	50, 000
Elongation per inch after rupture	inch..	0 2050
Elongation per inch under strain at elastic limit	do....	.001550
Reduction in diameter at point of rupture	do....	.134
Reduction in area after rupture, per centum of original section		46. 2
Position of rupture		⅜ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.32*, ″.09

No. 1181.

Marks, $\frac{32\ T_{36}}{B\ T_{3}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000850	.000200	0.	....	
6,000	30,000	.001050	.000200	0.	....	
7,000	35,000	.001200	.000150	0.	....	
8,000	40,000	.001350	.000150	.000050	.000050	
9,000	45,000	.001500	.000150	.000050	0.	
10,000	50,000	.001750	.000250	.000100	.000050	
10,200	51,000	.001800	.000050	....	....	
10,400	52,000	.001850	.000050	....	....	Elastic limit.
10,600	53,000	.002150	.000300	....	....	
10,800	54,000	.002600	.000450	....	....	
11,000	55,000	.003200	.000600	.001300	.001200	
11,200	56,000	.004250	.001050	....	....	
11,400	57,000	.004950	.000700	....	....	
11,600	58,000	.006300	.001350	....	....	
11,800	59,000	.007900	.001600	....	....	
12,000	60,000	.008100	.000500	.006100	.004800	
12,400	62,000	.010600	.002200	....	....	
12,800	64,000	.013050	.002450	....	....	
13,200	66,000	.015250	.002200	....	....	
13,600	68,000	.017250	.002000	....	....	
14,000	70,000	.019750	.002500	....	....	
14,400	72,000	.022500	.002750	....	....	
14,800	74,000	.025000	.002500	....	....	
15,200	76,000	.028100	.003100	....	....	
15,600	78,000	.031250	.003150	....	....	
16,000	80,000	.035000	.003750	....	....	
16,400	82,000	.039050	.004050	....	....	
16,800	84,000	.044050	.005000	....	....	
17,200	86,000	.050800	.006750	....	....	
17,600	88,000	.065000	.004200	....	....	
18,000	90,000	.072000	.007000	....	....	
18,400	92,000	.098500	.026500	....	....	
18,450	92,250	.1200	.0215	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	92,250
Elastic limit per square inch of original section	do....	52,000
Elongation per inch after rupture	inch..	0.2100
Elongation per inch under strain at elastic limit	do....	.001850
Reduction in diameter at point of rupture	do....	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		″.55 from neck
Character of broken surface		silky, 85 per centum; granular, 15 per centum
Elongation of inch sections		″.30*, ″.12

No. 566.

Marks, $\frac{32\ T_{30}}{B\ T}$,
Length, 3''.997.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1. 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	. 000050	. 000050	0.	....	
5, 000	10, 000	. 000250	. 000200	0.	....	
7, 500	15, 000	. 000400	. 000150	0.	....	
10, 000	20, 000	. 000550	. 000150	0.	....	
12, 500	25, 000	. 000700	. 000150	0.	....	
15, 000	30, 000	. 000850	. 000150	0.	....	
17, 500	35, 000	. 001000	. 000150	0.	....	
20, 000	40, 000	. 001150	. 000150	0.	....	
22, 500	45, 000	. 001350	. 000200	0.	....	
25, 000	50, 000	. 001600	. 000250	. 000050	. 000050	Elastic limit.
25, 500	51, 000	. 002500	. 000900	....	....	
26, 000	52, 000	. 003150	. 000650	....	....	
26, 500	53, 000	. 005000	. 001850	....	....	
27, 000	54, 000	. 006250	. 001250	....	....	
27, 500	55, 000	. 007900	. 001650	. 005900	. 005850	
49, 610	99, 220	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	50, 000
Compression per inch under stress at elastic limit	inch..	0. 001600
Ultimate strength per square inch of original section	pounds..	99, 220
Manner of failure		triple flexure

No. 1182.

Marks, $\genfrac{}{}{0pt}{}{32\ T_{9}}{M\ T_{1}}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000500	.000150	0.	....	
4,000	20,000	.000600	.000100	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001300	.000200	0.	....	
9,000	45,000	.001450	.000150	.000050	.000050	
9,600	48,000	.001500	.000050	....	....	
9,800	49,000	.001550	.000050	....	....	Elastic limit.
10,000	50,000	.001750	.000200	....	....	
10,200	51,000	.004250	.002700	....	....	
10,400	52,000	.005600	.001350	....	....	
10,600	53,000	.006600	.001000	....	....	
10,800	54,000	.007250	.006500	....	....	
11,000	55,000	.008400	.001150	.000350	.006300	
11,200	56,000	.009350	.000950	....	....	
11,400	57,000	.010200	.000850	....	....	
11,600	58,000	.011550	.001350	....	....	
11,800	59,000	.012550	.001000	....	....	
12,000	60,000	.013550	.001000	.011400	.005050	
12,400	62,000	.015850	.002300	....	....	
12,800	64,000	.018350	.002500	....	....	
13,200	66,000	.021200	.002850	....	....	
13,600	68,000	.024100	.002900	....	....	
14,000	70,000	.027150	.003050	....	....	
14,400	72,000	.031050	.003900	....	....	
14,800	74,000	.034250	.003200	....	....	
15,200	76,000	.038750	.004500	....	....	
15,600	78,000	.044150	.005400	....	....	
16,000	80,000	.052000	.007850	....	....	
16,400	82,000	.060300	.008500	....	....	
16,800	84,000	.072500	.012000	....	....	
17,200	86,000	.097500	.025000	....	....	
17,290	86,450	.1300	.0325	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	86,450
Elastic limit per square inch of original section	do ...	49,000
Elongation per inch after rupture	inch..	0.2500
Elongation per inch under strain at elastic limit	do....	.001550
Reduction in diameter at point of rupture	do ...	.154
Reduction in area after rupture, per centum of original section		51.9
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		″.31, ″.19

No. 1183.

Marks, $\begin{smallmatrix}32 & T_{20}\\ M & T_2\end{smallmatrix}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	—.000050	—.000050	
2,000	10,000	.000200	.000100	—.000050	0.	
3,000	15,000	.000350	.000150	—.000050	0.	
4,000	20,000	.000550	.000200	—.000050	0.	
5,000	25,000	.000700	.000150	—.000050	0.	
6,000	30,000	.000850	.000150	—.000050	0.	
7,000	35,000	.001000	.000150	—.000050	0.	
8,000	40,000	.001200	.000200	—.000050	0.	
9,000	45,000	.001350	.000150			
9,400	47,000	.001450	.000100			
9,600	48,000	.001500	.000050			
9,800	49,000	.001550	.000050			Elastic limit.
10,000	50,000	.002000	.000450	.000350	.000400	
10,200	51,000	.002550	.000550			
10,400	52,000	.003700	.001150			
10,600	53,000	.004750	.001050			
10,800	54,000	.005550	.000800			
11,000	55,000	.006400	.000850	.004350	.004000	
11,200	56,000	.007650	.001250			
11,400	57,000	.008400	.000750			
11,600	58,000	.009250	.000850			
11,800	59,000	.010550	.001300			
12,000	60,000	.011400	.000850	.009150	.004800	
12,400	62,000	013550	.002150			
12,800	64,000	.015750	.002200			
13,200	66,000	.018150	.002400			
13,600	68,000	.021000	.002850			
14,000	70,000	.023600	.002600			
14,400	72,000	.026550	.002950			
14,800	74,000	.029800	.003250			
15,200	76,000	.033050	.003250			
15,600	78,000	.037500	.004450			
16,000	80,000	.043000	.005500			
16,400	82,000	.048750	.005750			
16,800	84,000	.056000	.007250			
17,200	86,000	.067000	.011000			
17,600	88,000	.085000	.018000			
17,760	88,800	.1150	.0300			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	88,800
Elastic limit per square inch of original section	do....	49,000
Elongation per inch after rupture	inch..	0.2100
Elongation per inch under strain at elastic limit	do....	.001550
Reduction in diameter at point of rupture	do....	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		".70 from neck
Character of broken surface		silky
Elongation of inch sections		".33*, ".09

No. 2258.

Marks, $\genfrac{}{}{0pt}{}{32\ T_{12}}{B\ T_{1}}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	....	....	
2,000	10,000	.000250	.000150	....	....	
3,000	15,000	.000400	.000150	....	....	
4,000	20,000	.000600	.000200	....	....	
5,000	25,000	.000800	.000200	....	....	
6,000	30,000	.000950	.000150	....	....	
7,000	35,000	.001150	.000200	....	....	
8,000	40,000	.001350	.000200	....	....	
9,000	45,000	.001500	.000150	....	....	
10,000	50,000	.001750	.000250	....	....	
10,200	51,000	.001800	.000050	....	....	Elastic limit.
10,400	52,000	.002100	.000300	....	....	
10,600	53,000	.003350	.001250	....	....	
10,800	54,000	.004600	.001250	....	....	
11,000	55,000	.006250	.001650	....	....	
11,200	56,000	.007900	.001650	....	....	
11,400	57,000	.008900	.001000	....	....	
11,600	58,000	.009900	.001000	....	....	
11,800	59,000	.010850	.000950	....	....	
12,000	60,000	.011850	.001000	....	....	
12,400	62,000	.014150	.002300	....	....	
12,800	64,000	.016400	.002250	....	....	
13,200	66,000	.019050	.002650	....	....	
13,600	68,000	.021500	.002450	....	....	
14,000	70,000	.024250	.002750	....	....	
14,400	72,000	.027500	.003250	....	....	
14,800	74,000	.031250	.003750	....	....	
15,200	76,000	.035400	.004150	....	....	
15,600	78,000	.039750	.004350	....	....	
16,000	80,000	.045250	.005500	....	....	
16,400	82,000	.052000	.006750	....	....	
16,800	84,000	.0600	.0080	....	....	
17,200	86,000	.0700	.0100	....	....	
17,600	88,000	.1000	.0300	....	....	
17,690	88,450	.1450	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	88,450
Elastic limit per square inch of original section	do....	51,000
Elongation per inch after rupture	inch..	0.2350
Elongation per inch under strain at elastic limit	do....	.001800
Reduction in diameter at point of rupture	do....	.134
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		⅜ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.31*, ″.16

No. 2259.

Marks, $\frac{32\ T_{31}}{B\ T_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000500	.000150	0.	....	
4,000	20,000	.000650	.000150	—.000050	—.000050	
5,000	25,000	.000750	.000100	—.000050	0.	
6,000	30,000	.000900	.000150	—.000050	0.	
7,000	35,000	.001050	.000150	—.000050	0.	
8,000	40,000	.001200	.000150	—.000050	0.	
9,000	45,000	.001450	.000250	—.000000	.000050	
9,200	46,000	.001500	.000050	....	....	
9,400	47,000	.001550	.000050	....	....	
9,600	48,000	.001650	.000100	....	....	Elastic limit.
9,800	49,000	.002250	.000600	....	....	
10,000	50,000	.002700	.000450	....	....	
10,200	51,000	.004000	.001300	....	....	
10,400	52,000	.005600	.001600	....	....	
10,600	53,000	.007100	.001500	....	....	
10,800	54,000	.008000	.000900	....	....	
11,000	55,000	.009050	.001050	....	....	
11,200	56,000	.010050	.001000	....	....	
11,400	57,000	.011050	.001000	....	....	
11,600	58,000	.012100	.001050	....	....	
11,800	59,000	.013250	.001150	....	....	
12,000	60,000	.014500	.001250	....	....	
12,400	62,000	.016650	.002150	....	....	
12,800	64,000	.019050	.002400	....	....	
13,200	66,000	.021350	.002300	....	....	
13,600	68,000	.024100	.002750	....	....	
14,000	70,000	.027050	.002950	....	....	
14,400	72,000	.030600	.003350	....	....	
14,800	74,000	.035050	.004450	....	....	
15,200	76,000	.039100	.004050	....	....	
15,600	78,000	.044750	.005650	....	....	
16,000	80,000	.051100	.006350	....	....	
16,400	82,000	.0600	.0089	....	....	
16,800	84,000	.0700	.0100	....	....	
17,200	86,000	.0950	.0250	....	....	
17,300	86,500	.1150	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	86,500
Elastic limit per square inch of original section	do	48,000
Elongation per inch after rupture	inch	0.2100
Elongation per inch under strain at elastic limit	do	.001650
Reduction in diameter at point of rupture	do	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		″.80 from neck
Character of broken surface		silky
Elongation of inch sections		″.32, ″.10

No. 631.

Marks, $\frac{32\ T_{11}}{B\ T_{2}}$
Length, 4″.002.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000200	.000200	0.	....	
5,000	10,000	.000400	.000200	0.	....	
7,500	15,000	.000550	.000150	0.	....	
10,000	20,000	.000700	.000150	0.	....	
12,500	25,000	.000850	.000150	0.	....	
15,000	30,000	.000100	.000150	0.	....	
17,500	35,000	.001150	.000150	0.	....	
20,000	40,000	.001300	.000150	0.	....	
22,500	45,000	.001450	0.	0.	....	
23,000	46,000	.001450	.000150	....	....	
23,500	47,000	.001500	.000050	....	....	
24,000	48,000	.001550	.000050	....	....	
24,500	49,000	.001600	.000050	....	....	Elastic limit.
25,000	50,000	.002650	.001050	.001600	.001600	
25,500	51,000	.006850	.004200	....	....	
26,000	52,000	.009050	.002200	....	....	
44,990	89,980	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	49,000
Compression per inch under stress at elastic limit	inch..	0.001600
Ultimate strength per square inch of original section	pounds..	89,980
Manner of failure		triple flexure

No. 2260.

Marks, $\frac{32\ T_{31}}{M\ T_{1}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001050	.000150	0.	....	
8,000	40,000	.001250	.000200	0.	....	
9,000	45,000	.001450	.000200	0.	....	
9,200	46,000	.001550	.000100	....	....	
9,400	47,000	.001650	.000100	....	....	Elastic limit.
9,600	48,000	.002150	.000500	....	....	
9,800	49,000	.002700	.000550	....	....	
10,000	50,000	.003250	.000550	....	....	
10,200	51,000	.003900	.000650	....	....	
10,400	52,000	.004900	.001000	....	....	
10,600	53,000	.005500	.000600	....	....	
10,800	54,000	.006850	.001350	....	....	
11,000	55,000	.009000	.002150	....	....	
11,200	56,000	.010500	.001500	....	....	
11,400	57,000	.011550	.001050	....	....	
11,600	58,000	.012400	.000850	....	....	
11,800	59,000	.013500	.001100	....	....	
12,000	60,000	.015000	.001500	....	....	
12,400	62,000	.017150	.002150	....	....	
12,800	64,000	.019650	.002500	....	....	
13,200	66,000	.022000	.002350	....	....	
13,600	68,000	.025000	.003000	....	....	
14,000	70,000	.028150	.003150	....	....	
14,400	72,000	.031700	.003550	....	....	
14,800	74,000	.035700	.004000	....	....	
15,200	76,000	.040750	.005050	....	....	
15,600	78,000	.048550	.008500	....	....	
16,000	80,000	.054000	.007450	....	....	
16,400	82,000	.0600	.0060	....	....	
16,800	84,000	.0800	.0200	....	....	
17,200	86,000	.1100	.0300	....	....	
17,210	86,050	.1250	.0150	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	86,050
Elastic limit per square inch of original section	do	47,000
Elongation per inch after rupture	inch	0.2050
Elongation per inch under strain at elastic limit	do	.001650
Reduction in diameter at point of rupture	do	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		½ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.33*, ″.08

No. 2261.

Marks, $\begin{smallmatrix}32 & T_{11}\\ M & T_{2}\end{smallmatrix}$,
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000500	.000200	0.	....	
4, 000	20, 000	.000700	.000200	0.	....	
5, 000	25, 000	.000850	.000150	0.	....	
6, 000	30, 000	.001000	.000150	0.	....	
7, 000	35, 000	.001200	.000200	0.	....	
8, 000	40, 000	.001400	.000200	0.	....	
9, 000	45, 000	.001550	.000150	0.	....	
9, 200	46, 000	.001600	.000050	....	....	
9, 400	47, 000	.001650	.000050	....	....	
9, 600	48, 000	.001850	.000200	....	....	
9, 800	49, 000	.001950	.000100	....	....	
10, 000	50, 000	.002000	.000050	....	....	Elastic limit.
10, 200	51, 000	.002500	.000500	....	....	
10, 400	52, 000	.002750	.000250	....	....	
10, 600	53, 000	.003000	.000250	....	....	
10, 800	54, 000	.003400	.000400	....	....	
11, 000	55, 000	.004300	.000900	....	....	
11, 200	56, 000	.006000	.001700	....	....	
11, 400	57, 000	.007500	.001500	....	....	
11, 600	58, 000	.008550	.001050	....	....	
11, 800	59, 000	.009600	.001050	....	....	
12, 000	60, 000	.010600	.001000	....	....	
12, 400	62, 000	.013000	.002400	....	....	
12, 800	64, 000	.015350	.002350	....	....	
13, 200	66, 000	.017750	.002400	....	....	
13, 600	68, 000	.019850	.002100	....	....	
14, 000	70, 000	.022500	.002650	....	....	
14, 400	72, 000	.025250	.002750	....	....	
14, 800	74, 000	.028250	.003000	....	....	
15, 200	76, 000	.031450	.003200	....	....	
15, 600	78, 000	.035000	.003550	....	....	
16, 000	80, 000	.039500	.004500	....	....	
16, 400	82, 000	.044750	.005250	....	....	
16, 800	84, 000	.050750	.006000	....	....	
17, 200	86, 000	.0600	.009250	....	....	
17, 600	88, 000	.0800	.0200	....	....	
18, 000	90, 000	.1000	.0200	....	....	
18, 050	90, 250	.1300	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	90, 250
Elastic limit per square inch of original section	do....	50, 000
Elongation per inch after rupture	inch..	0. 1850
Elongation per inch under strain at elastic limit	do....	.002000
Reduction in diameter at point of rupture	do....	.115
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		″.40 from neck
Character of broken surface		silky, with fine granulation at the circumference
Elongation of inch sections		″.27*, ″.10

No. 1697.

Marks, ${}^{32\,\mathrm{Tn}}_{\mathrm{B\,T_1}}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001150	.000200	0.	....	
8,000	40,000	.001300	.000150	0.	....	Elastic limit.
		.005750	.004450	....	....	
8,200	41,000	.006950	.001200	....	....	
8,400	42,000	.009450	.002500	....	....	
8,600	43,000	.010450	.001000	....	....	
8,800	44,000	.011950	.001500	....	....	
9,000	45,000	.012550	.000600	.010700	.010700	
9,200	46,000	.013550	.001000	....	....	
9,400	47,000	.014000	.000450	....	....	
9,600	48,000	.014900	.000900	....	....	
9,800	49,000	.016250	.001350	....	....	
10,000	50,000	.017350	.001100	.015350	.004650	
10,200	51,000	.018250	.000900	....	....	
10,400	52,000	.019050	.000800	....	....	
10,600	53,000	.019750	.000700	....	....	
10,800	54,000	.021500	.001750	....	....	
11,000	55,000	.023000	.001500	....	....	
11,200	56,000	.024050	.001050	....	....	
11,400	57,000	.025300	.001250	....	....	
11,600	58,000	.026600	.001300	....	....	
11,800	59,000	.028000	.001400	....	....	
12,000	60,000	.029600	.001600	....	....	
12,400	62,000	.033100	.003500	....	....	
12,800	64,000	.036300	.003200	....	....	
13,200	66,000	.040600	.004300	....	....	
13,600	68,000	.045500	.004900	....	....	
14,000	70,000	.050850	.005350	....	....	
14,400	72,000	.057750	.006900	....	....	
14,800	74,000	.065000	.007250	....	....	
15,200	76,000	.076000	.011000	....	....	
15,600	78,000	.0950	.0190	....	....	
16,000	80,000	.1200	.0250	....	....	
16,060	80,300	.1500	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80,300
Elastic limit per square inch of original section	do	40,000
Elongation per inch after rupture	inch..	0.2350
Elongation per inch under strain at elastic limit	do ..	.001300
Reduction in diameter at point of rupture	do	.114
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		¼ inch from middle of stem
Character of broken surface		dull silky center; granular at the circumference
Elongation of inch sections		″.34*, ″.13

No. 1698.

Marks, $^{32\ T_8}_{B\ T_2}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000700	.000100	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001050	.000200	0.	....	
7,800	39,000	.001200	.000150	....	....	Elastic limit.
8,000	40,000	.007200	.006000	.005650	.005650	
8,200	41,000	.007850	.000650	....	....	
8,400	42,000	.008500	.000650	....	....	
8,600	43,000	.009250	.000750	....	....	
8,800	44,000	.010300	.001050	....	....	
9,000	45,000	.011300	.001000	....	....	
9,200	46,000	.012100	.000800	....	....	
9,400	47,000	.013100	.001000	....	....	
9,600	48,000	.014100	.001000	....	....	
9,800	49,000	.015250	.001150	....	....	
10,000	50,000	.016250	.001000	....	....	
10,400	52,000	.018500	.002250	....	....	
10,800	54,000	.020650	.002150	....	....	
11,200	56,000	.023600	.002950	....	....	
11,600	58,000	.026150	.002550	....	....	
12,000	60,000	.029250	.003100	....	....	
12,400	62,000	.032850	.003600	....	....	
12,800	64,000	.036750	.003900	....	....	
13,200	66,000	.041050	.004300	....	....	
13,600	68,000	.047600	.006550	....	....	
14,000	70,000	.052650	.005050	....	....	
14,400	72,000	.061000	.008350	....	....	
14,800	74,000	.072000	.011000	....	....	
15,200	76,000	.085000	.013000	....	....	
15,600	78,000	.1150	.0300	....	....	
15,980	79,900	.1750	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	79,900
Elastic limit per square inch of original section	do....	39,000
Elongation per inch after rupture	inch..	0.2600
Elongation per inch under strain at elastic limit	do....	.001200
Reduction in diameter at point of rupture	do....	.124
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		¾ inch from neck
Character of broken surface		dull silky; granular at circumference
Elongation of inch sections		″.35*, ″.17

No. 578.

Marks, $\overset{32\ T_{22}}{B\ T_{3}}$
Length 3''.997.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	—.000050	—.000050	
5, 000	10, 000	.000250	.000150	—.000050	0.	
7, 500	15, 000	.000350	.000100	—.000050	0.	
10, 000	20, 000	.000550	.000200	—.000100	—.000050	
12, 500	25, 000	.000700	.000150	—.000100	0.	
15, 000	30, 000	.000900	.000200	—.000100	0.	
15, 500	31, 000	.000900	0.	....	....	
16, 000	32, 000	.000950	.000050	....	....	
16, 500	33, 000	.001000	.000050	....	....	
17, 000	34, 000	.001000	0.	....	....	
17, 500	35, 000	.001050	.000050	—.000100	0.	
18, 000	36, 000	.001200	.000150	....	....	Elastic limit.
18, 500	37, 000	.003250	.002050	....	....	
19, 000	38, 000	.004200	.000950	....	....	
19, 500	39, 000	.004950	.000750	....	....	
20, 000	49, 000	.005500	.000550	.004400	.004500	
20, 500	41, 000	.006250	.000750	....	....	
21, 000	42, 000	.007000	.000750	....	....	
21, 500	43, 000	.008900	.001900	....	....	
22, 000	44, 000	.009850	.000950	....	....	
22, 500	45, 000	.010750	.000900	.009550	.005150	
23, 000	46, 000	.011750	.001000	....	....	
23, 500	47, 000	.012350	.000600	....	....	
24, 000	48, 000	.013800	.001450	....	....	
24, 500	49, 000	.014300	.000500	....	....	
25, 000	50, 000	.015500	.001200	.013750	.004200	
25, 500	51, 000	.016250	.000750	....	....	
26, 000	52, 000	.017150	.000900	....	....	
26, 500	53, 000	.018150	.001000	....	....	
27, 000	54, 000	.019500	.001450	....	....	
27, 500	55, 000	.020350	.000850	.018650	.004900	
28, 000	56, 000	.021550	.001200	....	....	
28, 500	57, 000	.022650	.001100	....	....	
29, 000	58, 000	.024000	.001350	....	....	
29, 500	59, 000	.025500	.001500	....	....	
30, 000	60. 000	.026400	.000900	.024750	.006100	
43, 800	87, 600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	36, 000
Compression per inch under stress at elastic limit	inch..	0. 001200
Ultimate strength per square inch of original section	pounds..	87, 600
Manner of failure		triple flexure

No. 1699.

Marks, $\overset{32\ T_{9}}{M\ T_{1}}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000400	.000100	0.	....	
4,000	20,000	.000600	.000200	0.	....	
5,000	25,000	.000700	.000100	0.	....	
6,000	30,000	.000900	.000200	0.	....	
7,000	35,000	.001050	.000150	0.	....	
8,000	40,000	.001200	.000150	0.	....	
8,200	41,000	.001250	.000050	....	....	
8,400	42,000	.001300	.000050	....	....	
8,600	43,000	.001350	.000050	....	....	
8,800	44,000	.001400	.000050	....	....	
9,000	45,000	{.001450 {.003400	.000050 .001950	.000030	.000030	Elastic limit.
9,200	46,000	.005400	.002000	....	....	
9,400	47,000	.007450	.002050	....	....	
9,600	48,000	.008950	.001500	....	....	
9,800	49,000	.009700	.000750	....	....	
10,000	50,000	.011000	.001300	.008950	.008900	
10,200	51,000	.011900	.000900	....	....	
10,400	52,000	.012400	.000500	....	....	
10,600	53,000	.013000	.000600	....	....	
10,800	54,000	.014250	.001200	....	....	
11,000	55,000	.015600	.001250	....	....	
11,200	56,000	.016600	.001350	....	....	
11,400	57,000	.017800	.001000	....	....	
11,600	58,000	.019050	.001200	....	....	
11,800	59,000	.020000	.000950	....	....	
12,000	60,000	.021400	.001400	....	....	
12,400	62,000	.024150	.002750	....	....	
12,800	64,000	.026800	.002650	....	....	
13,200	66,000	.030250	.003450	....	....	
13,600	68,000	.034700	.004450	....	....	
14,000	70,900	.038250	.003550	....	....	
14,400	72,000	.043250	.005000	....	....	
14,800	74,000	.049100	.005850	....	....	
15,200	76,000	.057000	.007900	....	....	
15,600	78,000	.065000	.008000	....	....	
16,000	80,000	.080500	.015500	....	....	
16,400	82,000	.104500	.024000	....	....	
16,680	83,400	.1600	.0555	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	83,400
Elastic limit per square inch of original section	do....	45,000
Elongation per inch after rupture	inch..	0.2600
Elongation per inch under strain at elastic limit	do....	.001450
Reduction in diameter at point of rupture	do ...	.134
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.37*, ″.15

No. 1700.

Marks, $\frac{32\ T_{23}}{M\ T_{2}}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000550	.000200	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001000	.000150	0.	....	
8,000	40,000	.001200	.000200	0.	....	
9,000	45,000	.001300	.000100	0.	....	
10,000	50,000	.001450	.000150	0.	....	
10,200	51,000	.001500	.000050	....	....	
10,400	52,000	.001550	.000050	....	....	
10,600	53,000	.001600	.000050	....	....	Elastic limit.
10,800	54,000	.002450	.000850	....	....	
11,000	55,000	.004850	.002400	.002850	.002850	
11,200	56,000	.006200	.001350	....	....	
11,400	57,000	.007050	.000850	....	....	
11,600	58,000	.007900	.000850	....	....	
11,800	59,000	.008950	.001050	....	....	
12,000	60,000	.010150	.001200	....	....	
12,400	62,000	.012450	.002300	....	....	
12,800	64,000	.014600	.002150	....	....	
13,200	66,000	.017250	.002650	....	....	
13,600	68,000	.019600	.002350	....	....	
14,000	70,000	.022250	.002650	....	....	
14,400	72,000	.025050	.002800	....	....	
14,800	74,000	.027400	.002350	....	....	
15,200	76,000	.030600	.003200	....	....	
15,600	78,000	.035000	.004400	....	....	
16,000	80,000	.039650	.004650	....	....	
16,400	82,000	.045950	.006300	....	....	
16,800	84,000	.051750	.005800	....	....	
17,200	86,000	.061400	.009650	....	....	
17,600	88,000	.077000	.015600	....	....	
17,990	89,950	.1300	.0530	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	89,950
Elastic limit per square inch of original section	do....	53,000
Elongation per inch after rupture	inch..	0.2400
Elongation per inch under strain at elastic limit	do....	.001600
Reduction in diameter at point of rupture	do....	.124
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.35*, ″.13

[Additional specimens.]

No. 2506.

Marks, $\substack{82\ \mathrm{T}_{28} \\ \mathrm{B}\ \mathrm{T}_4}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000500	.000100	0.	....	
5,000	25,000	.000650	.000150	0.	....	
6,000	30,000	.000850	.000200	0.	....	
7,000	35,000	.001050	.000200	0.	....	
8,000	40,000	.001200	.000150	0.	....	
8,200	41,000	.001300	.000100	....	....	Elastic limit.
8,400	42,000	.001750	.000450	....	....	
8,600	43,000	.007750	.006000	....	....	
8,800	44,000	.010300	.002550	....	....	
9,000	45,000	.012600	.002300	....	....	
9,200	46,000	.013550	.000950	....	....	
9,400	47,000	.014550	.001000	....	....	
9,600	48,000	.015750	.001200	....	....	
9,800	49,000	.017100	.001350	....	....	
10,000	50,000	.018500	.001400	....	....	
10,400	52,000	.020750	.002250	....	....	
10,800	54,000	.024000	.003250	....	....	
11,200	56,000	.027000	.003000	....	....	
11,600	58,000	.030600	.003600	....	....	
12,000	60,000	.035000	.004400	....	....	
12,400	62,000	.039750	.004750	....	....	
12,800	64,000	.045850	.006100	....	....	
13,200	66,000	.052400	.006550	....	....	
13,600	68,000	.060500	.008100	....	....	
14,000	70,000	.0800	.0195	....	....	
14,400	72,000	.0900	.0100	....	....	
14,800	74,000	.1100	.0200	....	....	
15,100	75,500	.1650	.0550	....	....	Tensile strength

General summary.

Tensile strength per square inch of original section	pounds	75,500
Elastic limit per square inch of original section	do	41,000
Elongation per inch after rupture	inch	0.2750
Elongation per inch under strain at elastic limit	do	.001300
Reduction in diameter at point of rupture	do	.155
Reduction in area after rupture, per centum of original section		51.9
Position of rupture		″.90 from neck
Character of broken surface		silky
Elongation of inch sections		″.38*, ″.17

No. 2507.

Marks, $\begin{matrix}32\ T_{n}\\ B\ T_{s}\end{matrix}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001050	.000200	....	....	
8,000	40,000	.001200	.000150	....	....	
8,200	41,000	.001250	.000050	....	....	
8,400	42,000	.001300	.000050	....	....	Elastic limit.
8,600	43,000	.005000	.003700	....	....	
8,800	44,000	.014000	.009000	....	....	
9,000	45,000	.015000	.001000	....	....	
9,200	46,000	.015550	.000550	....	....	
9,400	47,000	.016300	.000750	....	....	
9,600	48,000	.017550	.001250	....	....	
9,800	49,000	.018850	.001000	....	....	
10,000	50,000	.020000	.001450	....	....	
10,400	52,000	.022500	.002500	....	....	
10,800	54,000	.025250	.002750	....	....	
11,200	56,000	.028500	.003250	....	....	
11,600	58,000	.032150	.003650	....	....	
12,000	60,000	.035750	.003600	....	....	
12,400	62,000	.040600	.004850	....	....	
12,800	64,000	.045000	.004400	....	....	
13,200	66,000	.052500	.007500	....	....	
13,600	68,000	.0600	.0075	....	....	
14,000	70,000	.0650	.0050	....	....	
14,400	72,000	.0850	.0200	....	....	
14,800	74,000	.1000	.0150	....	....	
15,200	76,000	.1150	.0150	....	....	
15,480	77,400	.1800	.0650	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	77,400
Elastic limit per square inch of original section....................do....	42,000
Elongation per inch after rupture ....inch..	0.2400
Elongation per inch under strain at elastic limit....................do....	.001300
Reduction in diameter at point of rupture ....do....	.095
Reduction in area after rupture, per centum of original section....................	34.0
Position of rupture....................	1″.05 from neck
Character of broken surface	granular, 60 per centum; dull flaky, 40 per centum
Elongation of inch sections	″.30*, ″.18

No. 653.

Marks, $\frac{32\ T_{n}}{B\ T_{6}}$
Length, 4.″003.
Diameter, ″.702.
Sectional area, .387 square inch.

Applied loads.		Compression per inch.	Successiv compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
387	1, 000	0.	0.	0.	0.	Initial load.
1, 935	5, 000	.000100	.000100	0.	....	
3, 870	10, 000	.000167	.000067	0.	....	
5, 805	15, 000	.000300	.000133	0.	....	
7, 740	20, 000	.000433	.000133	0.	....	
9, 675	25, 000	.000600	.000167	0.	....	
11, 610	30, 000	.000833	.000233	0.	....	
13, 545	35, 000	.001000	.000167	0.	....	
15, 480	40, 000	.001267	.000267	.000067	.000067	
15, 867	41, 000	.001267	0.	....	....	
16, 254	42, 000	.001300	.000033	....	....	
16, 641	43, 000	.001333	.000033	....	....	Elastic limit.
17, 028	44, 000	.002233	.000900	....	....	
17, 415	45, 000	.003000	.000767	....	....	
17, 802	46, 000	.003833	.000833	....	....	
18, 189	47, 000	.008433	.004600	....	....	
18, 576	48, 000	.009433	.001000	....	....	
29, 420	76, 020	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	43, 000
Compression per inch under stress at elastic limit	inch..	0. 001333
Ultimate strength per square inch of original section	pounds..	76, 021
Manner of failure		triple flexure

No. 2508.

Marks, $\begin{smallmatrix}32\ T_{22}\\ M\ T_{2}\end{smallmatrix}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.		
2, 000	10, 000	.000250	.000150	0.		
3, 000	15, 000	.000400	.000150	0.		
4, 000	20, 000	.000550	.000150	0.		
5, 000	25, 000	.000700	.000150	0.		
6, 000	30, 000	.000900	.000200	0.		
7, 000	35, 000	.001050	.000150	0.		
8, 000	40, 000	.001200	.000150	0.		
8, 200	41, 000	.001250	.004050			
8, 400	42, 000	.001250	0.			
8, 600	43, 000	.001300	.000050			
8, 800	44, 000	.001350	.000050			
9, 000	45, 000	.001400	.000050			
9, 200	46, 000	.001400	0.			
9, 400	47, 000	.001450	.000050			
9, 600	48, 000	.001500	.000050			
9, 800	49, 000	.001550	.000050			
10, 000	50, 000	.001550	0.			
10, 200	51, 000	.001600	.000050			
10, 400	52, 000	.001650	.000050			Elastic limit.
10, 600	53, 000	.003600	.001950			
10, 800	54, 000	.004500	.000900			
11, 000	55, 000	.006000	.001500			
11, 200	56, 000	.009850	.003850			
11, 400	57, 000	.010750	.000900			
11, 600	58, 000	.011800	.001050			
11, 800	59, 000	.012800	.001000			
12, 000	60, 000	.014000	.001200			
12, 400	62, 000	.017500	.003500			
12, 800	64, 000	.020250	.002750			
13, 200	66, 000	.023000	.002750			
13, 600	68, 000	.025600	.002600			
14, 000	70, 000	.029250	.003650			
14, 400	72, 000	.033500	.004250			
14, 800	74, 060	.038000	.004500			
15, 200	76, 000	.043500	.005500			
15, 600	78, 000	.050000	.0065			
16, 000	80, 000	.0550	.0050			
16, 400	82, 000	.0700	.0150			
16, 800	84, 000	.0900	.0200			
17, 010	85, 050	.1450	.0550			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	85, 050
Elastic limit per square inch of original section	do	52, 000
Elongation per inch after rupture	inch	0. 2500
Elongation per inch under strain at elastic limit	do	.001650
Reduction in diameter at point of rupture	do	.135
Reduction in area after rupture, per centum of original section		46. 2
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		".15, ".35*

No. 2509.

Marks, $\overset{32\ T_{n}}{M\ T_{4}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000550	.000100	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000800	.000100	0.	....	
7,000	35,000	.000950	.000150	0.	....	
8,000	40,000	.001150	.000200	0.	....	
9,000	45,000	.001350	.000200	....	....	
10,000	50,000	.001550	.000200	....	....	
10,200	51,000	.001550	0.*	....	....	
10,400	52,000	.001600	.000050	....	....	
10,600	53,000	.001700	.000100	....	....	Elastic limit.
10,800	54,000	.002950	.001250	....	....	
11,000	55,000	.004250	.001300	....	....	
11,200	56,000	.007750	.003500	....	....	
11,400	57,000	.008550	.000800	....	....	
11,600	58,000	.009600	.001050	....	....	
11,800	59,000	.010650	.001050	....	....	
12,000	60,000	.012000	.001350	....	....	
12,400	62,000	.014150	.002150	....	....	
12,800	64,000	.016550	.002400	....	....	
13,200	66,000	.019250	.002700	....	....	
13,600	68,000	.022000	.002750	....	....	
14,000	70,000	.024750	.002750	....	....	
14,400	72,000	.028300	.003550	....	....	
14,800	74,000	.032050	.003750	....	....	
15,200	76,000	.036050	.004000	....	....	
15,600	78,000	.042000	.005950	....	....	
16,000	80,000	.048250	.006250	....	....	
16,400	82,000	.0550	.006750	....	....	
16,800	84,000	.0650	.0100	....	....	
17,200	86,000	.0900	.0250	....	....	
17,490	87,450	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	87,450
Elastic limit per square inch of original section	do....	53,000
Elongation per inch after rupture	inch..	0.2700
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		1″.25 from neck
Character of broken surface		silky
Elongation of inch sections		″.30*, ″.24*

No. 1701.

Marks, $^{32\ T_{28}}_{B\ T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000850	.000100	0.	....	
7,000	35,000	.001050	.000200	0.	....	
8,000	40,000	.001250	.000200	0.	....	
9,000	45,000	.001400	.000150	0.	....	
10,000	50,000	.001600	.000200	0.	....	
10,200	51,000	.001650	.000050	....	....	
10,400	52,000	.001750	.000100	....	....	
10,600	53,000	.001850	.000100	....	....	Elastic limit.
10,800	54,000	.002400	.000550	....	....	
11,000	55,000	.003000	.000600	.001150	.001150	
11,200	56,000	.004100	.001100	....	....	
11,400	57,000	.005100	.001000	....	....	
11,600	58,000	.006400	.001300	....	....	
11,800	59,000	.007400	.001000	....	....	
12,000	60,000	.008700	.001300	.006450	.005300	
12,400	62,000	.009850	.001150	....	....	
12,800	64,000	.011800	.001950	....	....	
13,200	66,000	.014100	.002300	....	....	
13,600	68,000	.016000	.001900	....	....	
14,000	70,000	.018100	.002100	....	....	
14,400	72,000	.021250	.003150	....	....	
14,800	74,000	.023500	.002250	....	....	
15,200	76,000	.025600	.002150	....	....	
15,600	78,000	.028550	.002950	....	....	
16,000	80,000	.032100	.003550	....	....	
16,400	82,000	.035600	.003500	....	....	
16,800	84,000	.040000	.004400	....	....	
17,200	86,000	.045500	.005500	....	....	
17,600	88,000	.051550	.006050	....	....	
18,000	90,000	.062500	.010950	....	....	
18,400	92,000	.073750	.011250	....	....	
18,800	94,000	.1150	.041250	....	....	
18,810	94,050	.1350	.0200	....	....	Tensile strength.

General summary.

Specific gravity		7.8591
Tensile strength per square inch of original section	pounds	94,050
Elastic limit per square inch of original section	do	53,000
Elongation per inch after rupture	inch	0.2300
Elongation per inch under strain at elastic limit	do	.001850
Reduction in diameter at point of rupture	do	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		″.45 from middle of stem
Character of broken surface		granular; dull center
Elongation of inch sections		″.30*, ″.16

No. 1702.

Marks, $\genfrac{}{}{0pt}{}{32\ T_{33}}{B\ T_{3}}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000450	.000250	0.	....	
4,000	20,000	.000550	.000100	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000950	.000250	0.	....	
7,000	35,000	.001050	.000100	0.	....	
8,000	40,000	.001150	.000100	0.	....	
9,000	45,000	.001300	.000150	0.	....	
10,000	50,000	.001450	.000150	0.	....	
10,200	51,000	.001500	.000050	....	....	
10,400	52,000	.001600	.000100	....	....	Elastic limit.
10,600	53,000	.001800	.000200	....	....	
10,800	54,000	.002000	.000200	....	....	
11,000	55,000	.002500	.000500	.000700	.000700	
11,200	56,000	.002950	.000450	....	....	
11,400	57,000	.003700	.000750	....	....	
11,600	58,000	.004900	.001200	....	....	
11,800	59,000	.006100	.001200	....	....	
12,000	60,000	.007250	.001150	.005050	.004350	
12,400	62,000	.009000	.001750	....	....	
12,800	64,000	.011300	.002300	....	....	
13,200	66,000	.013300	.002000	....	....	
13,600	68,000	.015500	.002200	....	....	
14,000	70,000	.018000	.002500	....	....	
14,400	72,000	.020400	.002400	....	....	
14,800	74,000	.023050	.002650	....	....	
15,200	76,000	.026050	.003000	....	....	
15,600	78,000	.028600	.002550	....	....	
16,000	80,000	.03250	.003900	....	....	
16,400	82,000	.036500	.004000	....	....	
16,800	84,000	.042000	.005500	....	....	
17,200	88,000	.047300	.005300	....	....	
17,600	88,000	.055600	.008300	....	....	
18,000	90,000	.065000	.009400	....	....	
18,400	92,000	.084250	.019250	....	....	
18,600	93,000	.1450	.060750	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	93,000
Elastic limit per square inch of original section	do....	52,000
Elongation per inch after rupture	inch..	0.2400
Elongation per inch under strain at elastic limit	do....	.001600
Reduction in diameter at point of rupture	do....	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		⅝ inch from neck
Character of broken surface		granular; dull center
Elongation of inch sections		".32*, ".17

No. 579

Marks, $\frac{82\ T_{33}}{B\ T_{3}}$
Length, 3''.995.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000450	.000150	0.	....	
10,000	20,000	.000600	.000150	0.	....	
12,500	25,000	.000800	.000200	0.	....	
15,000	30,000	.001000	.000200	0.	....	
17,500	35,000	.001150	.000150	0.	....	
20,000	40,000	.001350	.000200	0.	....	
20,500	41,000	.001400	.000050	....	....	
21,000	42,000	.001400	0.	....	....	
21,500	43,000	.001450	.000050	....	....	
22,000	44,000	.001500	.000050	....	....	
22,500	45,000	.001550	.000050	.000050	.000050	
27,000	54,000	.006050	.004500	.004100	.004050	
27,500	55,000	.007250	.001200	....	....	
28,000	56,000	.008550	.001300	....	....	
28,500	57,000	.010450	.001900	....	....	
29,000	58,000	.012800	.002350	....	....	
29,500	59,000	.014500	.001700	....	....	
30,000	60,000	.016750	.002250	.014450	.010350	
48,100	96,200	....	....	....	....	Ultimate strength.

Manner of failure .... **triple flexure.**

No. 1703.

Marks, $\frac{32\ \mathrm{T}_{s}}{\mathrm{M\ T}}$,
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000250	.000100	0.	....	
3, 000	15, 000	.000450	.000200	0.	....	
4, 000	20, 000	.000550	.000100	0.	....	
5, 000	25, 000	.000650	.000100	0.	....	
6, 000	30, 000	.000800	.000150	0.	....	
7, 000	35, 000	.000950	.000150	0.	....	
8, 000	40, 000	.001150	.000200	0.	....	
9, 000	45, 000	.001300	.000150	0.	....	
10, 000	50, 000	.001500	.000200	0.	....	
10, 200	51, 000	.001550	.000050	....	....	
10, 400	52, 000	.001600	.000050	....	....	
10, 600	53, 000	.001600	0.	....	....	
10, 800	54, 000	.001650	.000050	....	....	
11, 000	55, 000	.001650	0.	0.	....	
11, 200	56, 000	.001700	.000050	....	....	Elastic limit.
11, 400	57, 000	.002000	.000300	....	....	
11, 600	58, 000	.002500	.000500	....	....	
11, 800	59, 000	.003350	.000850	....	....	
12, 000	60, 000	.004950	.001600	.002800	.002800	
12, 400	62, 000	.007250	.002300	....	....	
12, 800	64, 000	.009200	.001950	....	....	
13, 200	66, 000	.011500	.002300	....	....	
13, 600	68, 000	.013700	.002200	....	....	
14, 000	70, 000	.015750	.002050	....	....	
14, 400	72, 000	.018250	.002500	....	....	
14, 800	74, 000	.020900	.002650	....	....	
15, 200	76, 000	.023600	.002700	....	....	
15, 600	78, 000	.026550	.002950	....	....	
16, 000	80, 000	.029800	.003250	....	....	
16, 400	82, 000	.033500	.003700	....	....	
16, 800	84, 000	.038250	.004750	....	....	
17, 200	86, 000	.043250	.005000	....	....	
17, 600	88, 000	.050600	.007350	....	....	
18, 000	90, 000	.059500	.008900	....	....	
18, 400	92, 000	.075000	.015500	....	....	
18, 670	93, 350	.1100	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	93, 350
Elastic limit per square inch of original section	do ...	56, 000
Elongation per inch after rupture	inch..	0. 2000
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.115
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		⅜ inch from neck
Character of broken surface		granular; dull center
Elongation of inch sections		″.30*, ″.10

No. 1705.

Marks, $\overset{32\ T_{23}}{M\ T_2}$

Diameter, ″.505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000600	.000200	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001100	.000200	0.	....	
8,000	40,000	.001300	.000200	0.	....	
9,000	45,000	.001400	.000100	0.	....	
10,000	50,000	.001550	.000150	0.	....	
10,200	51,000	.001600	.000050	....	....	
10,400	52,000	.001650	.000050	....	....	
10,600	53,000	.001650	0.	....	....	
10,800	54,000	.001700	.000050	....	....	
11,000	55,000	.001750	.000050	0.	....	
11,200	56,000	.001800	.000050	....	....	
11,400	57,000	.001850	.000050	....	....	Elastic limit.
11,600	58,000	.002050	.000200	....	....	
11,800	59,000	.002300	.000250	....	....	
12,000	60,000	.003050	.000750	.001100	.001100	Rested under initial load 1 hour.
12,400	62,000	.004750	.001700*	....	....	
12,800	64,000	.007500	.002750	....	....	
13,200	66,000	.010300	.002800	....	....	
13,600	68,000	.012550	.002250	....	....	
14,000	70,000	.014900	.002350	....	....	
14,400	72,000	.017100	.002200	....	....	
14,800	74,000	.020000	.002900	....	....	
15,200	76,000	.022300	.002300	....	....	
15,600	78,000	.025000	.002700	....	....	
16,000	80,000	.028400	.003400	....	....	
16,400	82,000	.032250	.003850	....	....	
16,800	84,000	.036000	.003750	....	....	
17,200	86,000	.041250	.005250	....	....	
17,600	88,000	.046800	.005550	....	....	
18,000	90,000	.056200	.009400	....	....	
18,400	92,000	.0700	.0138	....	....	
18,780	93,900	.1200	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	93,900
Elastic limit per square inch of original section	do....	57,000
Elongation per inch after rupture	inch..	0.2100
Elongation per inch under strain at elastic limit	do....	.001850
Reduction in diameter at point of rupture	do....	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		at middle of stem
Character of broken surface		granular; dull center
Elongation of inch sections		″.23*, ″.19

No. 2047.

Marks, $\begin{matrix}32 & T_x\\ M & T_1\end{matrix}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001250	.000150	0.	....	Elastic limit.
		.007450	.006200	....	....	
8,200	41,000	.008650	.001200	....	....	
8,400	42,000	.009800	.001150	....	....	
8,600	43,000	.010400	.000600	....	....	
8,800	44,000	.011350	.000950	....	....	
9,000	45,000	.012150	.000800	.010400	.010400	
9,200	46,000	.013250	.001100	....	....	
9,400	47,000	.014900	.001650	....	....	
9,600	48,000	.016500	.001600	....	....	
9,800	49,000	.017050	.000550	....	....	
10,000	50,000	.017750	.000700	....	....	
10.200	51,000	.018550	.000800	....	....	
10,400	52,000	.019700	.001150	....	....	
10,600	53,000	.020850	.001150	....	....	
10,800	54,000	.022450	.001600	....	....	
11,000	55,000	.023950	.001500	....	....	
11,200	56,000	.025000	.001050	....	....	
11,400	57,000	.026800	.001800	....	....	
11,600	58,000	.028500	.001700	....	....	
11.800	59,000	.030050	.001550	....	....	
12,000	60,000	.031900	.001850	....	....	
12,400	62,000	.035750	.003850	....	....	
12,800	64,000	.041000	.005250	....	....	
13,200	66,000	.046000	.005000	....	....	
13,600	68,000	.052600	.006600	....	....	
14,000	70,000	.059550	.006950	....	....	
14,400	72,000	.070000	.010450	....	....	
14,800	74,000	.0900	.0200	....	....	
15,200	76,000	.1100	.0200	....	....	
15,460	77,300	.1600	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	77,300
Elastic limit per square inch of original section	do....	40,000
Elongation per inch after rupture	inch..	0.2600
Elongation per inch under strain at elastic limit	do....	.001250
Reduction in diameter at point of rupture	do....	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		″.06 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.24, ″.26*

No. 2048.

Marks, $\genfrac{}{}{0pt}{}{32\,T_{24}}{B\,T_{3}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000050	.000050	—.000050	—.000050	
2, 000	10, 000	.000150	.000100	—.000050	0.	
3, 000	15, 000	.000250	.000100	—.000050	0.	
4, 000	20, 000	.000350	.000100	—.000050	0.	
5, 000	25, 000	.000500	.000150	—.000050	0.	
6, 000	30, 000	.000650	.000150	—.000050	0.	
7, 000	35, 000	.000900	.000250	—.000050	0.	
7, 200	36, 000	.000900	0.	....	....	
7, 400	37, 000	.000950	.000050	....	....	
7, 600	38, 000	.000950	0.	....	....	
7, 800	39, 000	.001000	.000050	....	....	Elastic limit.
8, 000	40, 000	.008800	.007800	.007250	.007300	
8, 200	41, 000	.009200	.000400	....	....	
8, 400	42, 000	.009900	.000700	....	....	
8, 600	43, 000	.010750	.000850	....	....	
8, 800	44, 000	.011600	.000850	....	....	
9, 000	45, 000	.012500	.000900	....	....	
9, 200	46, 000	.013550	.001050	....	....	
9, 400	47, 000	.014650	.001100	....	....	
9, 600	48, 000	.015750	.001100	....	....	
9, 800	49, 000	.016850	.001100	....	....	
10, 000	50, 000	.018150	.001300	....	....	
10, 400	52, 000	.020400	.002250	....	....	
10, 800	54, 000	.022900	.002500	....	....	
11, 200	56, 000	.026200	.003300	....	....	
11, 600	58, 000	.028900	.002700	....	....	
12, 000	60, 000	.032400	.003500	....	....	
12, 400	62, 000	.036050	.003650	....	....	
12, 800	64, 000	.040750	.004700	....	....	
13, 200	66, 000	.047250	.006500	....	....	
13, 600	68, 000	.053250	.006000	....	....	
14, 000	70, 000	.059500	.006250	....	....	
14, 400	72, 000	.068400	.008900	....	....	
14, 800	74, 000	.081000	.012600	....	....	
15, 200	76, 000	.1000	.0190	....	....	
15, 600	78, 000	.1400	.0400	....	....	
15, 660	78, 300	.1800	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	78, 300
Elastic limit per square inch of original section	do....	39, 000
Elongation per inch after rupture	inch..	0. 2650
Elongation per inch under strain at elastic limit	do....	.001000
Reduction in diameter at point of rupture	do....	.115
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		¼ inch from middle of stem
Character of broken surface		granular, 40 per centum; dull silky, 60 per centum
Elongation of inch sections		″.34*, ″.21

No. 583.

Marks, $\frac{32\ T_{24}}{B\ T_{3}}$
Length, 4''.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	. 000100	. 000100	0.	....	
5, 000	10, 000	. 000250	. 000150	0.	....	
7, 500	15, 000	. 000400	. 000150	0.	....	
10, 000	20, 000	. 000500	. 000100	0.	....	
12, 500	25, 000	. 000650	. 000150	0.	....	
15, 000	30, 000	. 000850	. 000200	0.	....	
17, 500	35, 000	. 001050	. 000200	0.	....	
18, 000	36, 000	. 001050	0.	....	....	
18, 500	37, 000	. 001100	. 000050	....	....	
19, 000	38, 000	. 001150	. 000050	....	....	
19, 500	39, 000	. 001200	. 000050	....	....	
20, 000	40, 000	. 001300	. 000100	0.	....	Elastic limit.
20, 500	41, 000	. 001500	. 000200	....	....	
21, 000	42, 000	. 002250	. 000750	....	....	
21, 500	43, 000	. 006250	. 004000	....	....	
22, 000	44, 000	. 008000	. 001750	....	....	
22, 500	45, 000	. 008500	. 000500	. 007000	. 007000	
23, 000	46, 000	. 009150	. 000650	....	....	
23, 500	47, 000	. 009850	. 000700	....	....	
24, 000	48, 000	. 010500	. 000650	....	....	
24, 500	49, 000	. 011350	. 000850	....	....	
25, 000	50, 000	. 012250	. 000900	. 010350	. 003350	
43, 800	87, 600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section..........pounds.. 40, 000
Compression per inch under stress at elastic limit..........inch.. 0. 001300
Ultimate strength per square inch of original section..........pounds.. 87, 600
Manner of failure..........triple flexure

No. 2049.

Marks, $\frac{32\ T_{24}}{M\ T_{1}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001050	.000100	0.	....	
7,200	36,000	.001050	0.	....	....	
7,400	37,000	.001100	.000050	....	....	
7,600	38,000	.001150	.000050	....	....	
7,800	39,000	.001200	.000050	....	....	
8,000	40,000	.001250	.000050	0.	....	
8,200	41,000	.001250	0.	....	....	
8,400	42,000	.001350	.000100	....	....	
8,600	43,000	.001400	.000050	....	....	
8,800	44,000	.001400	0.	....	....	
9,000	45,000	.001450	.000050	0.	....	
9,200	46,000	.001450	0.	....	....	
9,400	47,000	.001500	.000050	....	....	
9,600	48,000	.001550	.000050	....	....	Elastic limit.
9,800	49,000	.002700	.001150	....	....	
10,000	50,000	.004200	.001500	.002450	.002450	
10,200	51,000	.005900	.001700	....	....	
10,400	52,000	.007400	.001500	....	....	
10,600	53,000	.008100	.000700	....	....	
10,800	54,000	.009200	.001100	....	....	
11,000	55,000	.010100	.000900	....	....	
11,200	56,000	.011250	.001150	....	....	
11,400	57,000	.012700	.001450	....	....	
11,600	58,000	.013600	.000900	....	....	
11,800	59,000	.014600	.001000	....	....	
12,000	60,000	.015700	.001100	....	....	
12,400	62,000	.018000	.002300	....	....	
12,800	64,000	.020400	.002400	....	....	
13,200	66,000	.023500	.003100	....	....	
13,600	68,000	.026200	.002700	....	....	
14,000	70,000	.030100	.003900	....	....	
14,400	72,000	.034050	.003950	....	....	
14,800	74,000	.038500	.004450	....	....	
15,200	76,000	.044000	.005500	....	....	
15,600	78,000	.049750	.005750	....	....	
16,000	80,000	.058500	.008750	....	....	
16,400	82,000	.069250	.010750	....	....	
16,800	84,000	.0900	.020750	....	....	
17,170	85,850	.1500	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	85,850
Elastic limit per square inch of original section	do	48,000
Elongation per inch after rupture	inch	0.2400
Elongation per inch under strain at elastic limit	do	.001550
Reduction in diameter at point of rupture	do	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		″.4 from neck
Character of broken surface		silky
Elongation of inch sections		″.36*, ″.12

No. 2050.

Marks, $\overset{32\ T_{24}}{M\ T_{2}}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000300	.000200	0.	....	
3, 000	15, 000	.000500	.000200	0.	....	
4, 000	20, 000	.000650	.000150	0.	....	
5, 000	25, 000	.000800	.000150	0.	....	
6, 000	30, 000	.001000	.000200	0.	....	
7, 000	35, 000	.001200	.000200	0.	....	
8, 000	40, 000	.001300	.000100	0.	....	
8, 200	41, 000	.001350	.000050	....	....	
8, 400	42, 000	.001350	0.	....	....	
8, 600	43, 000	.001400	.000050	....	....	
8, 800	44, 000	.001450	.000050	....	....	
9, 000	45, 000	.001500	.000050	.0	....	
9, 200	46, 000	.001500	0.	....	....	
9, 400	47, 000	.001550	.000050	....	....	
9, 600	48, 000	.001550	0.	....	....	
9, 800	49, 000	.001600	.000050	....	....	
10, 000	50, 000	.001650	.000050	.000050	.000050	
10, 200	51, 000	.001650	0.	....	....	
10, 400	52, 000	.001700	.000050	....	....	
10, 600	53, 000	.001850	.000150	....	....	Elastic limit.
10, 800	54, 000	.002700	.000850	....	....	
11, 000	55, 000	.004500	.001800	.002650	.002600	
11, 200	56, 000	.005650	.001150	....	....	
11, 400	57, 000	.006500	.000850	....	....	
11, 600	58, 000	.007550	.001050	....	....	
11, 800	59, 000	.008600	.001050	....	....	
12, 000	60, 000	.009700	.001100	....	....	
12, 400	62, 000	.011850	.002150	....	....	
12, 800	64, 000	.013800	.001950	....	....	
13, 200	66, 000	.016100	.002300	....	....	
13, 600	68, 000	.018550	.002450	....	....	
14, 000	70, 000	.021000	.002450	....	....	
14, 400	72, 000	.023850	.002850	....	....	
14, 800	74, 000	.026850	.003000	....	....	
15, 200	76, 000	.030150	.003300	....	....	
15, 600	78, 000	.034000	.003850	....	....	
16, 000	80, 000	.038350	.004350	....	....	
16, 400	82, 000	.044000	.005650	....	....	
16, 800	84, 000	.050000	.006000	....	....	
17, 200	86, 000	.059000	.009000	....	....	
17, 600	88, 000	.0750	.0160	....	....	
18, 000	90, 000	.0950	.0200	....	....	
18, 060	90, 300	.1350	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..................pounds..	90, 300
Elastic limit per square inch of original section ....do	53, 000
Elongation per inch after rupture..................inch..	0. 2300
Elongation per inch under strain at elastic limit..................do	.001850
Reduction in diameter at point of rupture..................do	.115
Reduction in area after rupture, per centum of original section	40. 3
Position of rupture	½ inch from neck
Character of broken surface..................	granular, 60 per centum ; silky, 40 per centum
Elongation of inch sections..................	".31*, ".15

No. 2049.

Marks, $\frac{32\ T_{4}}{M\ T_{1}}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001050	.000100	0.	....	
7,200	36,000	.001050	0.	....	....	
7,400	37,000	.001100	.000050	....	....	
7,600	38,000	.001150	.000050	....	....	
7,800	39,000	.001200	.000050	....	....	
8,000	40,000	.001250	.000050	0.	....	
8,200	41,000	.001250	0.	....	....	
8,400	42,000	.001350	.000100	....	....	
8,600	43,000	.001400	.000050	....	....	
8,800	44,000	.001400	0.	....	....	
9,000	45,000	.001450	.000050	0.	....	
9,200	46,000	.001450	0.	....	....	
9,400	47,000	.001500	.000050	....	....	
9,600	48,000	.001550	.000050	....	....	Elastic limit.
9,800	49,000	.002700	.001150	....	....	
10,000	50,000	.004200	.001500	.002450	.002450	
10,200	51,000	.005900	.001700	....	....	
10,400	52,000	.007400	.001500	....	....	
10,600	53,000	.008100	.000700	....	....	
10,800	54,000	.009200	.001100	....	....	
11,000	55,000	.010100	.000900	....	....	
11,200	56,000	.011250	.001150	....	....	
11,400	57,000	.012700	.001450	....	....	
11,600	58,000	.013600	.000900	....	....	
11,800	59,000	.014600	.001000	....	....	
12,000	60,000	.015700	.001100	....	....	
12,400	62,000	.018000	.002300	....	....	
12,800	64,000	.020400	.002400	....	....	
13,200	66,000	.023500	.003100	....	....	
13,600	68,000	.026200	.002700	....	....	
14,000	70,000	.030100	.003900	....	....	
14,400	72,000	.034050	.003950	....	....	
14,800	74,000	.038500	.004450	....	....	
15,200	76,000	.044000	.005500	....	....	
15,600	78,000	.049750	.005750	....	....	
16,000	80,000	.058500	.008750	....	....	
16,400	82,000	.069250	.010750	....	....	
16,800	84,000	.0900	.020750	....	....	
17,170	85,850	.1500	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	85,850
Elastic limit per square inch of original section	do	48,000
Elongation per inch after rupture	inch	0.2400
Elongation per inch under strain at elastic limit	do	.001550
Reduction in diameter at point of rupture	do	.185
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		".4 from neck
Character of broken surface		silky
Elongation of inch sections		".36*, ".12

No. 2050.

Marks, $\overset{32\ T_{24}}{M\ T_2}$

Diameter, ″.505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001200	.000200	0.	....	
8,000	40,000	.001300	.000100	0.	....	
8,200	41,000	.001350	.000050	....	....	
8,400	42,000	.001350	0.	....	....	
8,600	43,000	.001400	.000050	....	....	
8,800	44,000	.001450	.000050	....	....	
9,000	45,000	.001500	.000050	.0	....	
9,200	46,000	.001500	0.	....	....	
9,400	47,000	.001550	.000050	....	....	
9,600	48,000	.001550	0.	....	....	
9,800	49,000	.001600	.000050	....	....	
10,000	50,000	.001650	.000050	.000050	.000050	
10,200	51,000	.001650	0.	....	....	
10,400	52,000	.001700	.000050	....	....	
10,600	53,000	.001850	.000150	....	....	Elastic limit.
10,800	54,000	.002700	.000850	....	....	
11,000	55,000	.004500	.001800	.002650	.002600	
11,200	56,000	.005650	.001150	....	....	
11,400	57,000	.006500	.000850	....	....	
11,600	58,000	.007550	.001050	....	....	
11,800	59,000	.008600	.001050	....	....	
12,000	60,000	.009700	.001100	....	....	
12,400	62,000	.011850	.002150	....	....	
12,800	64,000	.013800	.001950	....	....	
13,200	66,000	.016100	.002300	....	....	
13,600	68,000	.018550	.002450	....	....	
14,000	70,000	.021000	.002450	....	....	
14,400	72,000	.023850	.002850	....	....	
14,800	74,000	.026850	.003000	....	....	
15,200	76,000	.030150	.003300	....	....	
15,600	78,000	.034000	.003850	....	....	
16,000	80,000	.038350	.004350	....	....	
16,400	82,000	.044000	.005650	....	....	
16,800	84,000	.050000	.006000	....	....	
17,200	86,000	.059000	.009000	....	....	
17,600	88,000	.0750	.0160	....	....	
18,000	90,000	.0950	.0200	....	....	
18,060	90,300	.1350	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	90,300
Elastic limit per square inch of original section	do	53,000
Elongation per inch after rupture	inch	0.2300
Elongation per inch under strain at elastic limit	do	.001850
Reduction in diameter at point of rupture	do	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		½ inch from neck
Character of broken surface		granular, 60 per centum; silky, 40 per centum
Elongation of inch sections		″.31*, ″.15

[Additional specimens.]

No. 2403.

Marks, $\overset{32\ T_{34}}{B\ T_4}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000400	.000100	0.	....	
4, 000	20, 000	.000600	.000200	0.	....	
5, 000	25, 000	.000800	.000200	0.	....	
6, 000	30, 000	.001000	.000200	0.	....	
7, 000	35, 000	.001100	.000100	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
8, 200	41, 000	.001300	.000050	....	....	
8, 400	42, 000	.001400	.000100	....	....	Elastic limit
8, 600	43, 000	.001750	.000350	....	....	
8, 800	44, 000	.005100	.003350	....	....	
9, 000	45, 000	.007850	.002750	....	....	
9, 200	46, 000	.008650	.000800	....	....	
9, 400	47, 000	.010600	.001950	....	....	
9, 600	48, 000	.011750	.001150	....	....	
9, 800	49, 000	.013500	.001750	....	....	
10, 000	50, 000	.015350	.001850	....	....	
10, 400	52, 000	.017000	.001650	....	....	
10, 800	54, 000	.019600	.002600	....	....	
11, 200	56, 000	.022000	.002400	....	....	
11, 600	58, 000	.026100	.004100	....	....	
12, 000	60, 000	.030000	.003900	....	....	
12, 400	62, 000	.034500	.004500	....	....	
12, 800	64, 000	.039050	.004550	....	....	
13, 200	66, 000	.045000	.005950	....	....	
13, 600	68, 000	.051750	.006750	....	....	
14, 000	70, 000	.0600	.008250	....	....	
14, 400	72, 000	.0750	.0150	....	....	
14, 800	74, 000	.0900	.0150	....	....	
15, 060	75, 300	.1200	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	75, 300
Elastic limit per square inch of original section	do....	42, 000
Elongation per inch after rupture	inch..	0. 2200
Elongation per inch under strain at elastic limit	do....	.001400
Reduction in diameter at point of rupture	do....	.145
Reduction in area after rupture, per centum of original section		49. 1
Position of rupture		″.55 from neck
Character of broken surface		silky
Elongation of inch sections		″.35*, ″.09

No. 2404.

Marks, $\frac{82\,T_{14}}{B\,T_{6}}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000450	.000200	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000700	.000100	0.	....	
6, 000	30, 000	.000850	.000150	0.	....	
7, 000	35, 000	.001000	.000150	0.	....	
8, 000	40, 000	.001150	.000150	0.	....	
9, 000	45, 000	.001350	.000200	....	....	
9, 200	46, 000	.001400	.000050	....	....	
9, 400	47, 000	.001450	.000050	....	....	
9, 600	48, 000	.001500	.000050	....	....	Elastic limit.
9, 800	49, 000	.004100	.002600	....	....	
10, 000	50, 000	.007100	.003000	....	....	
10, 400	52, 000	.008750	.001650	....	....	
10, 800	54, 000	.011500	.002750	....	....	
11, 200	56, 000	.013750	.002250	....	....	
11, 600	58, 000	.016000	.002250	....	....	
12, 000	60, 000	.019000	.003000	....	....	
12, 400	62, 000	.022000	.003000	....	....	
12, 800	64, 000	.024550	.002550	....	....	
13, 200	66, 000	.028000	.003450	....	....	
13, 600	68, 000	.032000	.004000	....	....	
14, 000	70, 000	.036250	.004250	....	....	
14, 400	72, 000	.042000	.005750	....	....	
14, 800	74, 000	.047500	.005500	....	....	
15, 200	76, 000	.055500	.008000	....	....	
15, 600	78, 000	.0600	.0045	....	....	
16, 000	80, 000	.0850	.0250	....	....	
16, 300	81, 500	.1500	.0650	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	81, 500
Elastic limit per square inch of original section	do....	48, 000
Elongation per inch after rupture	inch..	0. 2450
Elongation per inch under strain at elastic limit	do....	.001500
Reduction in diameter at point of rupture	do....	.145
Reduction in area after rupture, per centum of original section		49. 1
Position of rupture		".90 from neck
Character of broken surface		silky
Elongation of inch sections		".34*, ".15

No. 648.

Marks, $^{32\ T_{34}}_{B\ T_{6}}$
Length, 4''.004.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000400	.000150	0.	....	
10,000	20,000	.000550	.000150	0.	....	
12,500	25,000	.000750	.000200	0.	....	
15,000	30,000	.000950	.000200	0.	....	
17,500	35,000	.001250	.000300	.000050	.000050	
18,000	36,000	.001300	.000050	....	....	
18,500	37,000	.001350	.000050	....	....	
19,000	38,000	.001400	.000050	....	....	Elastic limit.
19,500	39,000	.001600	.000200	....	....	
20,000	40,000	.001900	.000300	....	....	
20,500	41,000	.011750	.009850	....	....	
21,000	42,000	.010500	.001250	....	....	
21,500	43,000	.010250	.000250	....	....	
22,000	44,000	.010400	.000150	....	....	
40,650	81,300	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds.. 38,00
Compression per inch under stress at elastic limit ....inch.. 0.00140
Ultimate strength per square inch of original section ....pounds.. 81,30
Manner of failure ....triple flexure

No. 2405

Marks, $\overset{82\ T_{34}}{M\ T_3}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000550	.000200	0.	....	
5,000	25,000	.000650	.000100	0.	....	
6,000	30,000	.000800	.000150	0.	....	
7,000	35,000	.000950	.000150	0.	....	
8,000	40,000	.001100	.000150	....	....	
9,000	45,000	.001300	.000200	....	....	
9,200	46,000	.001350	.000050	....	....	
9,400	47,000	.001400	.000050	....	....	Elastic limit.
9,600	48,000	.003500	.002100	....	....	
9,800	49,000	.004050	.000550	....	....	
10,000	50,000	.005000	.000950	....	....	
10,400	52,000	.008250	.003250	....	....	
10,800	54,000	.010500	.002250	....	....	
11,200	56,000	.014000	.003500	....	....	
11,600	58,000	.017000	.003000	....	....	
12,000	60,000	.020000	.003000	....	....	
12,400	62,000	.023000	.003000	....	....	
12,800	64,000	.026100	.003100	....	....	
13,200	66,000	.029500	.003400	....	....	
13,600	68,000	.034000	.004500	....	....	
14,000	70,000	.039250	.005250	....	....	
14,400	72,000	.045750	.006500	....	....	
14,800	74,000	.052000	.006250	....	....	
15,200	76,000	.0550	.0030	....	....	
15,600	78,000	.0850	.0300	....	....	
16,120	80,600	.1400	.0550	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80,600
Elastic limit per square inch of original section	do....	47,000
Elongation per inch after rupture	inch..	0.2050
Elongation per inch under strain at elastic limit	do....	.001400
Reduction in diameter at point of rupture	do....	.145
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		″.45 from neck
Character of broken surface		silky
Elongation of inch sections		″.32*, ″.09

No. 2406.

Marks, $^{32\ T_{34}}_{M\ T_{4}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000700	.000200	.000050	.000050	
5,000	25,000	.000900	.000200	.000050	0.	
6,000	30,000	.001100	.000200	.000100	.000050	
7,000	35,000	.001250	.000150	.000100	0.	
8,000	40,000	.001400	.000150	....	....	
9,000	45,000	.001600	.000200	....	....	
10,000	50,000	.001800	.000200	....	....	
10,200	51,000	.001850	.000050	....	....	
10,400	52,000	.001850	0.	....	....	
10,600	53,000	.001900	.000050	....	....	
10,800	54,000	.002000	.000100	....	....	Elastic limit.
11,000	55,000	.008000	.006000	....	....	
11,200	56,000	.009150	.001150	....	....	
11,400	57,000	.009650	.000500	....	....	
11,600	58,000	.010500	.000850	....	....	
11,800	59,000	.011750	.001250	....	....	
12,000	60,000	.014000	.002250	....	....	
12,400	62,000	.015800	.001800	....	....	
12,800	64,000	.018500	.002700	....	....	
13,200	66,000	.021100	.002600	....	....	
13,600	68,000	.024750	.003650	....	....	
14,000	70,000	.028000	.003250	....	....	
14,400	72,000	.031500	.003500	....	....	
14,800	74,000	.037000	.005500	....	....	
15,200	76,000	.043050	.006050	....	....	
15,600	78,000	.049500	.006450	....	....	
16,000	80,000	.0550	.0055	....	....	
16,400	82,000	.0650	.0100	....	....	
16,800	84,000	.1000	.0350	....	....	
16,820	84,100	.1200	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	84,100
Elastic limit per square inch of original section	do	54,000
Elongation per inch after rupture	inch	0.2350
Elongation per inch under strain at elastic limit	do	.002000
Reduction in diameter at point of rupture	do	.185
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		″.85 from neck
Character of broken surface		silky
Elongation of inch sections		″.35*, ″.12

[Additional specimens.]

No. 2605.

Marks, $\frac{82\ T.}{B\ T}$,
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	*Per square inch.*					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001050	.000150	0.	....	
8,000	40,000	.001200	.000150	....	....	
9,000	45,000	.001350	.000150	....	....	
10,000	50,000	.001600	.000250	....	....	
10,200	51,000	.001650	.000050	....	....	
10,400	52,000	.001700	.000050	....	....	
10,600	53,000	.001750	.000050	....	....	
10,800	54,000	.001800	.000050	....	....	
11,000	55,000	.001850	.000050	....	....	Elastic limit.
11,200	56,000	.002150	.000300	....	....	
11,400	57,000	.003700	.001550	....	....	
11,600	58,000	.005600	.001900	....	....	
11,800	59,000	.007050	.001450	....	....	
12,000	60,000	.008500	.001450	....	....	
12,400	62,000	.010600	.002100	....	....	
12,800	64,000	.012850	.002250	....	....	
13,200	66,000	.015100	.002250	....	....	
13,600	68,000	.017600	.002500	....	....	
14,000	70,000	.020350	.002750	....	....	
14,400	72,000	.023000	.002650	....	....	
14,800	74,000	.026100	.003100	....	....	
15,200	76,000	.029500	.003400	....	....	
15,600	78,000	.033550	.004050	....	....	
16,000	80,000	.038000	.004450	....	....	
16,400	82,000	.043500	.005500	....	....	
16,800	84,000	.049750	.006250	....	....	
17,200	86,000	.0575	.007750	....	....	
17,600	88,000	.0700	.0125	....	....	
18,000	90,000	.1000	.0300	....	....	
18,080	90,400	.1450	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	90,400
Elastic limit per square inch of original section	do	55,000
Elongation per inch after rupture	inch	0.2150
Elongation per inch under strain at elastic limit	do	.001850
Reduction in diameter at point of rupture	do	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		″.80 from neck
Character of broken surface		silky
Elongation of inch sections		″.32*, ″.11

No. 2406.

Marks, ${}^{32\,T_{34}}_{M\,T_4}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000700	.000200	.000050	.000050	
5,000	25,000	.000900	.000200	.000050	0.	
6,000	30,000	.001100	.000200	.000100	.000050	
7,000	35,000	.001250	.000150	.000100	0.	
8,000	40,000	.001400	.000150	....	....	
9,000	45,000	.001600	.000200	....	....	
10,000	50,000	.001800	.000200	....	....	
10,200	51,000	.001850	.000050	....	....	
10,400	52,000	.001850	0.	....	....	
10,600	53,000	.001900	.000050	....	....	
10,800	54,000	.002000	.000100	....	....	Elastic limit.
11,000	55,000	.008000	.006000	....	....	
11,200	56,000	.009150	.001150	....	....	
11,400	57,000	.009650	.000500	....	....	
11,600	58,000	.010500	.000850	....	....	
11,800	59,000	.011750	.001250	....	....	
12,000	60,000	.014000	.002250	....	....	
12,400	62,000	.015800	.001800	....	....	
12,800	64,000	.018500	.002700	....	....	
13,200	66,000	.021100	.002600	....	....	
13,600	68,000	.024750	.003650	....	....	
14,000	70,000	.028000	.003250	....	....	
14,400	72,000	.031500	.003500	....	....	
14,800	74,000	.037000	.005500	....	....	
15,200	76,000	.043050	.006050	....	....	
15,600	78,000	.049500	.006450	....	....	
16,000	80,000	.0550	.0055	....	....	
16,400	82,000	.0650	.0100	....	....	
16,800	84,000	.1000	.0350	....	....	
16,820	84,100	.1200	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	84,100
Elastic limit per square inch of original section	do....	54,000
Elongation per inch after rupture	inch..	0.2350
Elongation per inch under strain at elastic limit	do....	.002000
Reduction in diameter at point of rupture	do....	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		″.85 from neck
Character of broken surface		silky
Elongation of inch sections		″.35*, ″.12

[Additional specimens.]

No. 2605.

Marks, $\frac{82\ T_{14}}{B\ T_{7}}$,
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001050	.000150	0.	....	
8,000	40,000	.001200	.000150	....	....	
9,000	45,000	.001350	.000150	....	....	
10,000	50,000	.001600	.000250	....	....	
10,200	51,000	.001650	.000050	....	....	
10,400	52,000	.001700	.000050	....	....	
10,600	53,000	.001750	.000050	....	....	
10,800	54,000	.001800	.000050	....	....	
11,000	55,000	.001850	.000050	....	....	Elastic limit.
11,200	56,000	.002150	.000300	....	....	
11,400	57,000	.003700	.001550	....	....	
11,600	58,000	.005600	.001900	....	....	
11,800	59,000	.007050	.001450	....	....	
12,000	60,000	.008500	.001450	....	....	
12,400	62,000	.010600	.002100	....	....	
12,800	64,000	.012850	.002250	....	....	
13,200	66,000	.015100	.002250	....	....	
13,600	68,000	.017600	.002500	....	....	
14,000	70,000	.020350	.002750	....	....	
14,400	72,000	.023000	.002650	....	....	
14,800	74,000	.026100	.003100	....	....	
15,200	76,000	.029500	.003400	....	....	
15,600	78,000	.033550	.004050	....	....	
16,000	80,000	.038000	.004450	....	....	
16,400	82,000	.043500	.005500	....	....	
16,800	84,000	.049750	.006250	....	....	
17,200	86,000	.0575	.007750	....	....	
17,600	88,000	.0700	.0125	....	....	
18,000	90,000	.1000	.0300	....	....	
18,080	90,400	.1450	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	90,400
Elastic limit per square inch of original section	do....	55,000
Elongation per inch after rupture	inch..	0.2150
Elongation per inch under strain at elastic limit	do....	.001850
Reduction in diameter at point of rupture	do....	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		″.80 from neck
Character of broken surface		silky
Elongation of inch sections		″.82*, ″.11

No. 2606.

Marks, $\begin{matrix} 82\ T_{34} \\ B\ T_{3} \end{matrix}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000050	.000050	0.	....	
2,000	10,000	.000150	.000100	0.	....	
3,000	15,000	.000300	.000150	0.	....	
4,000	20,000	.000450	.000150	0.	....	
5,000	25,000	.000550	.000100	0.	....	
6,000	30,000	.000750	.000200	0.	....	
7,000	35,000	.000850	.000100	0.	....	
8,000	40,000	.001000	.000150	0.	....	
9,000	45,000	.001400	.000400	....	....	
9,200	46,000	.001450	.000050	....	....	
9,400	47,000	.001550	.000100	....	....	
9,600	48,000	.001600	.000050	....	....	
9,800	49,000	.001650	.000050	....	....	Elastic limit.
10,000	50,000	.001800	.000150	....	....	
10,200	51,000	.001950	.000150	....	....	
10,400	52,000	.002450	.000500	....	....	
10,600	53,000	.003150	.000700	....	....	
10,800	54,000	.004350	.001200	....	....	
11,000	55,000	.006500	.002150	....	....	
11,200	56,000	.008350	.001850	....	....	
11,600	58,000	.010000	.001650	....	....	
12,000	60,000	.012050	.002050	....	....	
12,400	62,000	.014500	.002450	....	....	
12,800	64,000	.016500	.002000	....	....	
13,200	66,000	.019000	.002500	....	....	
13,600	68,000	.021750	.002750	....	....	
14,000	70,000	.024850	.003100	....	....	
14,400	72,000	.027550	.002700	....	....	
14,800	74,000	.031500	.003950	....	....	
15,200	76,000	.035000	.003500	....	....	
15,600	78,000	.040000	.005000	....	....	
16,000	80,000	.045150	.005150	....	....	
16,400	82,000	.0525	.007350	....	....	
16,800	84,000	.0575	.0050	....	....	
17,200	86,000	.0800	.0225	....	....	
17,600	88,000	.1000	.0200	....	....	
17,650	88,250	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	88,250
Elastic limit per square inch of original section..........do....	49,000
Elongation per inch after rupture..........inch..	0.2150
Elongation per inch under strain at elastic limit..........do...	.001650
Reduction in diameter at point of rupture..........do...	.135
Reduction in area after rupture, per centum of original section..........	46.2
Position of rupture..........	″.70 from neck
Character of broken surface..........	silky
Elongation of inch sections..........	″.83*, ″.10

No. 677.

Marks, $\frac{23\ T_{34}}{B\ T_{9}}$
Length, 4″.005.
Diameter, ″.715.
Sectional area, .402 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
402	1, 000	0.	0.	0.	0.	Initial load.
2, 010	5, 000	.000100	.000100	0.	....	
4, 020	10, 000	.000233	.000133	0.	....	
6, 030	15, 000	.000433	.000200	0.	....	
8, 040	20, 000	.000567	.000134	0.	....	
10, 050	25, 000	.000733	.000166	0.	....	
12, 060	30, 000	.000933	.000200	0.	....	
14, 070	35, 000	.001100	.000167	0.	....	
16, 080	40, 000	.001267	.000167	0.	....	
16, 482	41, 000	.001267	0.	....	....	
16, 884	42, 000	.001333	.000066	....	....	
17, 286	43, 000	.001367	.000034	....	....	
17, 688	44, 000	001400	.000033	....	....	
18, 090	45, 000	.001467	.000067	....	....	
18, 492	46, 000	.001500	.000033	....	....	
18, 894	47, 000	.001500	0.	....	....	Elastic limit.
19, 296	48, 000	.002067	.000567	....	....	
19, 698	49, 000	.002400	.000333	....	....	
20, 100	50, 000	.002733	.000333	....	....	
20, 502	51, 000	.000330	.000567	....	....	
20, 904	52, 000	.003833	.000533	....	....	
21, 306	53, 000	.004700	.000867	....	....	
21, 708	54, 000	.006033	.001333	....	....	
22, 110	55, 000	.007267	.001234	....	....	
33, 850	84, 200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	47, 000
Compression per inch under stress at elastic limit	inch..	0. 001500
Ultimate strength per square inch of original section	pounds..	84, 200
Manner of failure		triple flexure

No. 2607.

Marks, $^{32\ T_{24}}_{M\ T_{5}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001200	.000200	0.	....	
8,000	40,000	.001350	.000150	....	....	
9,000	45,000	.001500	.000150	....	....	
9,200	46,000	.001550	.000050	....	....	Elastic limit.
9,400	47,000	.001750	.000200	....	....	
9,600	48,000	.002600	.000850	....	....	
9,800	49,000	.005500	.002900	....	....	
10,000	50,000	.006150	.000650	....	....	
10,400	52,000	.008400	.002250	....	....	
10,800	54,000	.010000	.001600	....	....	
11,200	56,000	.011800	.001800	....	....	
11,600	58,000	.013900	.002100	....	....	
12,000	60,000	.016400	.002500	....	....	
12,400	62,000	.018700	.002300	....	....	
12,800	64,000	.020600	.001900	....	....	
13,200	66,000	.022900	.002300	....	....	
13,600	68,000	.025500	.002600	....	....	
14,000	70,000	.028750	.003250	....	....	
14,400	72,000	.032300	.003550	....	....	
14,800	74,000	.034750	.002450	....	....	
15,200	76,000	.039050	.004300	....	....	
15,600	78,000	.044000	.004950	....	....	
16,000	80,000	.049500	.005500	....	....	
16,400	82,000	.0550	.0055	....	....	
16,800	84,000	.0650	.0100	....	....	
17,200	86,000	.0850	.0200	....	....	
17,600	88,000	.1050	.0200	....	....	
17,790	88,950	.1600	.0550	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	88,950
Elastic limit per square inch of original section	do	46,000
Elongation per inch after rupture	inch	0.2400
Elongation per inch under strain at elastic limit	do	.001550
Reduction in diameter at point of rupture	do	.145
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		½ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.14, ″.34

No. 2608.

Marks, $^{32\ T_{34}}_{M\ T_{6}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.		
2,000	10,000	.000300	.000150	0.		
3,000	15,000	.000450	.000150	0.		
4,000	20,000	.000650	.000200	0.		
5,000	25,000	.000850	.000200	0.		
6,000	30,000	.001050	.000200	0.		
7,000	35,000	.001150	.000100	0.		
8,000	40,000	.001350	.000200	0.		
9,000	45,000	.001500	.000150			
9,200	46,000	.001550	.000050			
9,400	47,000	.001600	.000050			Elastic limit.
9,600	48,000	.002200	.000600			
9,800	49,000	.003300	.001100			
10,000	50,000	.005650	.002350			
10,400	52,000	.007700	.002050			
10,800	54,000	.009450	.001750			
11,200	56,000	.011500	.002050			
11,600	58,000	.013500	.002000			
12,000	60,000	.015600	.002100			
12,400	62,000	.017850	.002250			
12,800	64,000	.020250	.002400			
13,200	66,000	.022650	.002400			
13,600	68,000	.025750	.003100			
14,000	70,000	.028750	.003000			
14,400	72,000	.032250	.003500			
14,800	74,000	.036250	.004000			
15,200	76,000	.040500	.004250			
15,600	78,000	.046750	.006250			
16,000	80,000	.0525	.005750			
16,400	82,000	.0575	.0050			
16,800	84,000	.0625	.0050			
16,900	84,500					Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	84,500
Elastic limit per square inch of original section	do	47,000
Elongation per inch after rupture	inch	0.0850
Elongation per inch under strain at elastic limit	do	.001600
Reduction in diameter at point of rupture	do	.035
Reduction in area after rupture, per centum of original section		13.2
Position of rupture		″.10 from neck
Character of broken surface		granular; flaky spot at circumference
Elongation of inch sections		″.10*, ″.07

No. 1706.

Marks, $\substack{32\ T_{[illegible]} \\ B\ T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000300	.000100	0.	....	
4,000	20,000	.000400	.000100	0.	....	
5,000	25,000	.000650	.000250	0.	....	
6,000	30,000	.000850	.000200	0.	....	
7,000	35,000	.001000	.000150	0.	....	
8,000	40,000	.001150	.000150	0.	....	
9,000	45,000	.001350	.000200	0.	....	
9,200	46,000	.001400	.000050	....	....	
9,400	47,000	.001450	.000050	....	....	
9,600	48,000	.001550	.000100	....	....	Elastic limit.
9,800	49,000	.001900	.000350	....	....	
10,000	50,000	.002500	.000600	.000850	.000850	
10,200	51,000	.003400	.000900	....	....	
10,400	52,000	.004450	.001050	....	....	
10,600	53,000	.005600	.001150	....	....	
10,800	54,000	.006450	.000850	....	....	
11,000	55,000	.007450	.001000	.005450	.004600	
11,200	56,000	.008500	.001050	....	....	
11,400	57,000	.009500	.001000	....	....	
11,600	58,000	.010500	.001000	....	....	
11,800	59,000	.012000	.001500	....	....	
12,000	60,000	.013000	.001000	....	....	
12,400	62,000	.015400	.002400	....	....	
12,800	64,000	.017700	.002300	....	....	
13,200	66,000	.020400	.002700	....	....	
13,600	68,000	.023500	.003100	....	....	
14,000	70,000	.026500	.003000	....	....	
14,400	72,000	.030150	.003650	....	....	
14,800	74,000	.033500	.003350	....	....	
15,200	76,000	.038300	.004800	....	....	
15,600	78,000	.043500	.005200	....	....	
16,000	80,000	.051100	.007600	....	....	
16,400	82,000	.061300	.010200	....	....	
16,800	84,000	.075250	.013950	....	....	
17,150	85,750	.1250	.049750	....	....	Tensile strength.

General summary.

Specific gravity		7.8606
Tensile strength per square inch of original section	pounds..	85,750
Elastic limit per square inch of original section	do. ..	48,000
Elongation per inch after rupture	inch..	0.2450
Elongation per inch under strain at elastic limit	do....	.001550
Reduction in diameter at point of rupture	do....	.155
Reduction in area after rupture, per centum of original section		51.9
Position of rupture		$\frac{3}{8}$ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.36*, ″.13

No. 1707.

Marks, $^{82\,T_{36}}_{B\,T_{3}}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000300	.000100	0.	....	
4, 000	20, 000	.000450	.000150	0.	....	
5, 000	25, 000	.000650	.000200	0.	....	
6, 000	30, 000	.000800	.000150	0.	....	
7, 000	35, 000	.001000	.000200	0.	....	
8, 000	40, 000	.001150	.000150	0.	....	
9, 000	45, 000	.001350	.000200	....	....	
9, 200	46, 000	.001400	.000050	....	....	
9, 400	47, 000	.001450	.000050	....	....	Elastic limit.
9, 600	48, 000	.001800	.000350	....	....	
9, 800	49, 000	.003050	.001250	....	....	
10, 000	50, 000	.004700	.001650	.002950	.002950	
10, 200	51, 000	.005900	.001200	....	....	
10, 400	52, 000	.006700	.000800	....	....	
10, 600	53, 000	.007950	.001250	....	....	
10, 800	54, 000	.008900	.000950	....	....	
11, 000	55, 000	.009900	.001000	.007900	.004950	
11, 200	56, 000	.011000	.001100	....	....	
11, 400	57, 000	.011900	.000900	....	....	
11, 600	58, 000	.012150	.001250	....	....	
11, 800	59, 000	.014450	.001300	....	....	
12, 000	60, 000	.015750	.001300	....	....	
12, 400	62, 000	.018400	.002650	....	....	
12, 800	64, 000	.020700	.002300	....	....	
13, 200	66, 000	.023900	.003200	....	....	
13, 600	68, 000	.026800	.002900	....	....	
14, 000	70, 000	.030600	.003800	....	....	
14, 400	72, 000	.034550	.003950	....	....	
14, 800	74, 000	.039250	.004700	....	....	
15, 200	76, 000	.045100	.005850	....	....	
15, 600	78, 000	.051800	.006700	....	....	
16, 000	80, 000	.062050	.010250	....	....	
16, 400	82, 000	.078250	.016200	....	....	
16, 790	83, 950	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	83, 950
Elastic limit per square inch of original section	do....	47, 000
Elongation per inch after rupture	inch..	0. 2550
Elongation per inch under strain at elastic limit	do....	.001450
Reduction in diameter at point of rupture	do....	.155
Reduction in area after rupture, per centum of original section		51. 9
Position of rupture		″.45 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.37*, ″.14

No. 595.

Marks, $\frac{32\,T_{26}}{B\,T_{2}}$
Length, 3″.999.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000400	.000150	0.	....	
10,000	20,000	.000500	.000100	0.	....	
12,500	25,000	.000650	.000150	0.	....	
15,000	30,000	.000800	.000150	0.	....	
17,500	35,000	.001000	.000200	0.	....	
20,000	40,000	.001100	.000100	0.	....	
22,500	45,000	.001250	.000150	—.000100	—.000100	
23,000	46,000	.001250	0.	....	....	
23,500	47,000	.001250	0.	....	....	
24,000	48,000	.001250	0.	....	....	
24,500	49,000	.001250	0.	....	....	
25,000	50,000	.001250	0.	—.000400	.000300	Elastic limit.
25,500	51,000	.001550	.000300	....	....	
26,000	52,000	.002250	.000700	....	....	
26,500	53,000	.003600	.001350	....	....	
27,000	54,000	.004500	.000900	....	....	
27,500	55,000	.005950	.001450	.004000	.004400	
45,800	91,600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	50,000
Compression per inch under stress at elastic limit	inch..	0.001250
Ultimate strength per square inch of original section	pounds..	91,600
Manner of failure		triple flexure

No. 1708

Marks, $\overset{32\,T_{28}}{M\,T_1}$.
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000550	.000200	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001050	.000200	0.	....	
8,000	40,000	.001200	.000150	0.	....	
9,000	45,000	.001350	.000150	0.	....	
10,000	50,000	.001500	.000150	0.	....	
10,200	51,000	.001600	.000100	....	....	
10,400	52,000	.001700	.000100	....	....	Elastic limit.
10,600	53,000	.002100	.000400	....	....	
10,800	54,000	.002700	.000600	....	....	
11,000	55,000	.005100	.002400	.003150	.003150	
11,200	56,000	.006600	.001500	....	....	
11,400	57,000	.007600	.001000	....	....	
11,600	58,000	.009000	.001400	....	....	
11,800	59,000	.010500	.001500	....	....	
12,000	60,000	.011500	.001000	....	....	
12,400	62,000	.013900	.002400	....	....	
12,800	64,000	.016100	.002200	....	....	
13,200	66,000	.018400	.002300	....	....	
13,600	68,000	.021050	.002650	....	....	
14,000	70,000	.023800	.002750	....	....	
14,400	72,000	.026700	.002900	....	....	
14,800	74,000	.030250	.003550	....	....	
15,200	76,000	.034150	.003900	....	....	
15,600	78,000	.039250	.005100	....	....	
16,000	80,000	.045250	.006000	....	....	
16,400	82,000	.051750	.006500	....	....	
16,800	84,000	.061400	.009650	....	....	
17,200	86,000	.075300	.013900	....	....	
17,600	88,000	.1050	.0297	....	....	
17,700	88,500	.1450	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	88,500
Elastic limit per square inch of original section	do....	52,000
Elongation per inch after rupture	inch..	0.2550
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.155
Reduction in area after rupture, per centum of original section		51.9
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		".26*, ".25*

No. 1709.

Marks, $\begin{smallmatrix}82\ T_{28}\\ M\ T_2\end{smallmatrix}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000500	.000150	0.	....	
5,000	25,000	.000650	.000150	0.	....	
6,000	30,000	.000850	.000200	0.	....	
7,000	35.000	.001000	.000150	0.	....	
8,000	40,000	.001150	.000150	0.	....	
9,000	45,000	{ .001400 { .001800	.000250 .000400	.... .000350	.... .000350	Elastic limit.
9,200	46,000	.002150	.000350	....	....	
9,400	47,000	.002550	.000400	....	....	
9,600	48,000	.003100	.000550	....	....	
9,800	49,000	.004050	.000950	....	....	
10,000	50,000	.007900	.003850	.006050	.005700	
10,200	51,000	.008700	.000800	....	....	
10,400	52,000	.009500	.000800	....	....	
10,600	53,000	.010850	.001350	....	....	
10,800	54,000	.011750	.000900	....	....	
11,000	55,000	.012750	.001000	....	....	
11,200	56,000	.013750	.001000	....	....	
11,400	57,000	.014900	.001150	....	....	
11,600	58,000	.016050	.001150	....	....	
11,800	59,000	.017400	.001350	....	....	
12,000	60,000	.018700	.001300	....	....	
12,400	62,000	.021300	.002600	....	....	
12,800	64,000	.024100	.002800	....	....	
13,200	66,000	.028000	.003900	....	....	
13,600	68,000	.031000	.003000	....	....	
14,000	70,000	.035000	.004000	....	....	
14,400	72,000	.040000	.005000	....	....	
14,800	74,000	.045000	.005000	....	....	
15,200	76,000	.052500	.007500	....	....	
15,600	78,000	.062500	.010000	....	....	
16,000	80,000	.073500	.011000	....	....	
16,400	82,000	.1000	.0265	....	....	
16,600	83,000	.1400	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	83,000
Elastic limit per square inch of original section	do ...	45,000
Elongation per inch after rupture	inch..	0.2150
Elongation per inch under strain at elastic limit	do....	.001400
Reduction in diameter at point of rupture	do....	.155
Reduction in area after rupture, per centum of original section		51.9
Position of rupture		″.43 from neck
Character of broken surface		silky
Elongation of inch sections		″.33*, ″.10

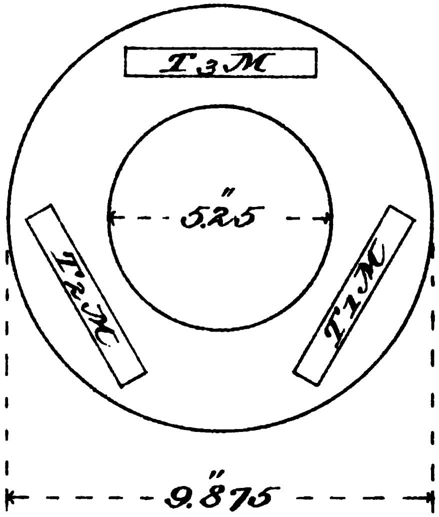
SPECIMENS FROM STEEL JACKETS

FOR

3".2 STEEL B. L. RIFLES.

Jacket 3.2" Rifle

General drawing
showing positions from
whence specimens were taken.



H Ex 31 49 2

No. 962.

Marks, $^{32\,\mathrm{J}}_{\mathrm{B\,T_1}}\mathrm{M}$
Diameter, ".505.
Sectional area, .20 square inch.

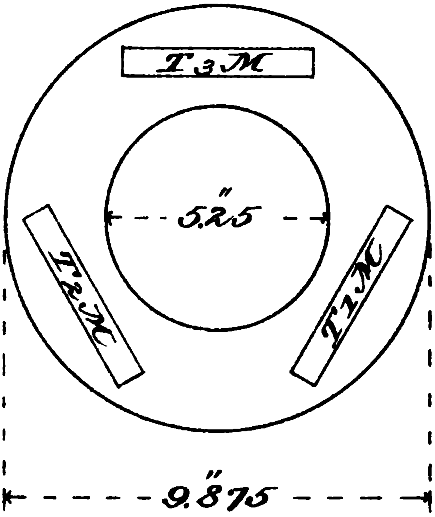
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000500	.000250	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001100	.000150	0.	....	
7,200	36,000	.001150	.000050	....	....	
7,600	38,000	.001200	.000050	....	....	
8,000	40,000	.001250	.000050	0.	....	
8,400	42,000	.001300	.000050	....	....	
8,800	44,000	.001350	.000050	....	....	
9,200	46,000	.001400	.000050	....	....	
9,600	48,000	.001450	.000050	....	....	
10,000	50,000	.001500	.000050	....	....	
10,400	52,000	.001600	.000100	....	....	Elastic limit.
10,600	53,000	.001750	.000150	....	....	
10,800	54,000	.002450	.000700	....	....	
11,000	55,000	.003050	.000600	....	....	
11,200	56,000	.003600	.000550	....	....	
11,400	57,000	.004400	.000800	....	....	
11,600	58,000	.005250	.000850	....	....	
11,800	59,000	.006250	.001000	....	....	
12,000	60,000	.007500	.001250	....	....	
12,400	62,000	.010400	.002900	....	....	
12,800	64,000	.013050	.002650	....	....	
13,200	56,000	.015850	.002800	....	....	
14,000	70,000	.017500	.001650	....	....	
14,800	74,000	.020600	.003100	....	....	
15,600	78,000	.025350	.004750	....	....	
16,400	82,000	.030500	.005150	....	....	
17,200	86,000	.037000	.006500	....	....	
18,000	90,000	.045400	.008400	....	....	
18,800	94,000	.060100	.014700	....	....	
19,600	98,000	.0900	.0299	....	....	
19,820	99,100	.1050	.0150	....	....	Tensile strength.
17,200	....	....	....	....	....	Load at time of rupture.

General summary.

Specific gravity		7.8695
Tensile strength per square inch of original section	pounds..	99,100
Elastic limit per square inch of original section	do....	52,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do....	.001600
Reduction in diameter at point of rupture	do....	.115
Reduction in area after rupture, per centum of original section		40.5
Position of rupture		".55 from neck
Character of broken surface		dull silky
Elongation of inch sections		".29, ".11

Jacket 3.2" Rifle

General drawing
showing positions from
whence specimens were taken.



H Ex 3/ 49 2

No. 962.

Marks, $^{32\ J}_{B\ T_1\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000500	.000250	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001100	.000150	0.	....	
7,200	36,000	.001150	.000050	....	....	
7,600	38,000	.001200	.000050	....	....	
8,000	40,000	.001250	.000050	0.	....	
8,400	42,000	.001300	.000050	....	....	
8,800	44,000	.001350	.000050	....	....	
9,200	46,000	.001400	.000050	....	....	
9,600	48,000	.001450	.000050	....	....	
10,000	50,000	.001500	.000050	....	....	
10,400	52,000	.001600	.000100	....	....	Elastic limit.
10,600	53,000	.001750	.000150	....	....	
10,800	54,000	.002450	.000700	....	....	
11,000	55,000	.003050	.000600	....	....	
11,200	56,000	.003600	.000550	....	....	
11,400	57,000	.004400	.000800	....	....	
11,600	58,000	.005250	.000850	....	....	
11,800	59,000	.006250	.001000	....	....	
12,000	60,000	.007500	.001250	....	....	
12,400	62,000	.010400	.002900	....	....	
12,800	64,000	.013050	.002650	....	....	
13,200	66,000	.015850	.002800	....	....	
14,000	70,000	.017500	.001650	....	....	
14,800	74,000	.020600	.003100	....	....	
15,600	78,000	.025350	.004750	....	....	
16,400	82,000	.030500	.005150	....	....	
17,200	86,000	.037000	.006500	....	....	
18,000	90,000	.045400	.008400	....	....	
18,800	94,000	.060100	.014700	....	....	
19,600	98,000	.0900	.0299	....	....	
19,820	99,100	.1050	.0150	....	....	Tensile strength.
17,200	....	....	....	....	....	Load at time of rupture.

General summary.

Specific gravity		7.8695
Tensile strength per square inch of original section	pounds..	99,100
Elastic limit per square inch of original section	do....	52,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do....	.001600
Reduction in diameter at point of rupture	do....	.115
Reduction in area after rupture, per centum of original section		40.5
Position of rupture		″.55 from neck
Character of broken surface		dull silky
Elongation of inch sections		″.29, ″.11

No. 963.

Marks, $^{32\ J}_{B\ T,\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000050	.000050	0.	....	
2,000	10,000	.000100	.000050	0.	....	
3,000	15,000	.000300	.000100	0.	....	
4,000	20,000	.000450	.000150	0.	....	
5,000	25,000	.000600	.000150	0.	....	
6,000	30,000	.000800	.000200	0.	....	
7,000	35,000	.000950	.000150	0.	....	
8,000	40,000	.001100	.000150	0.	....	
8,400	42,000	.001150	.000050	....	....	
8,800	44,000	.001200	.000050	....	....	
9,200	46,000	.001250	.000050	....	....	
9,600	48,000	.001350	.000100	....	....	
10,000	50,000	.001500	.000150	0.	....	Elastic limit.
10,200	51,000	.002400	.000900	....	....	
10,400	52,000	.003100	.000700	....	....	
10,800	54,000	.004850	.001750	....	....	
11,200	56,000	.006850	.002000	....	....	
12,000	60,000	.010400	.003550	....	....	
12,800	64,000	.014350	.003950	....	....	
13,600	68,000	.017750	.003400	....	....	
14,400	72,000	.022650	.004900	....	....	
15,200	76,000	.028500	.005850	....	....	
16,000	80,000	.036000	.007500	....	....	
16,800	84,000	.043750	.007750	....	....	
17,600	88,000	.058000	.014250	....	....	
18,400	92,000	.0700	.0120	....	....	
19,000	95,000	.1250	.0550	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	95,000
Elastic limit per square inch of original section	do...	50,000
Elongation per inch after rupture	inch..	0.1650
Elongation per inch under strain at elastic limit	do...	.001500
Reduction in diameter at point of rupture	do...	.065
Reduction in area after rupture, per centum of original section		24.0
Position of rupture		″.5 from neck

Character of broken surface..granular, 70 per centum; silky, 30 per centum; silky metal contains blow-hole.

Elongation of inch sections .... ″.21,″.12

No. 531.

Marks, $^{32J}_{\mathrm{B\ T}}$, M

Length, ″.449.

Diameter, ″.797.

Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000450	.000150	0.	....	
10,000	20,000	.000600	.000150	0.	....	
12,500	25,000	.000750	.000150	0.	....	
15,000	30,000	.000900	.000150	0.	....	
17,500	35,000	.001050	.000150	0.	....	
20,000	40,000	.001250	.000200	0.	....	
22,500	45,000	.001400	.000150	0.	....	
24,000	48,000	.001600	.000200	....	....	Elastic limit.
24,500	49,000	.001700	.000100	....	....	
25,000	50,000	.001800	.000100	.000250	.000250	
25,500	51,000	.002050	.000250	....	....	
26,000	52,000	.002400	.000350	....	....	
26,500	53,000	.002800	.000400	....	....	
27,000	54,000	.003250	.000450	....	....	
27,500	55,000	.003950	.000700	.002050	.001800	
28,000	56,000	.004550	.000600	....	....	
28,500	57,000	.005300	.000750	....	....	
29,000	58,000	.006200	.000900	....	....	
29,500	59,000	.007200	.001000	....	....	
30,000	60,000	.007900	.000700	.005700	.003650	
47,900	95,800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	48,000
Compression per inch under stress at elastic limit	inch..	0.001600
Ultimate strength per square inch of original section	pounds..	95,800
Manner of failure		triple flexure

No. 964.

Marks, $\overset{32\ J_3}{B\ T_1\ M}$
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000200	.000200	0.	....	
2,000	10,000	.000400	.000200	0.	....	
3,000	15,000	.000600	.000200	0.	....	
4,000	20,000	.000800	.000200	0.	....	
5,000	25,000	.001000	.000200	0.	....	
6,000	30,000	.001200	.000200	.000050	.000050	
7,000	35,000	.001350	.000150	.000050	0.	
8,000	40,000	.001500	.000150	.000050	0.	
9,200	46,000	.001750	.000250	....	....	
9,600	48,000	.001850	.000100	....	....	
10,000	50,000	.001900	.000050	....	....	
10,400	52,000	.002000	.000100	....	....	
10,800	54,000	.002100	.000100	....	....	
11,200	56,000	.002200	.000100	.000200	.000150	
11,600	58,000	.002300	.000100	....	....	
11,800	59,000	.002400	.000100	....	....	
12,000	60,000	.002500	.000100	.000400	.000200	Elastic limit.
12,200	61,000	.003000	.000500	....	....	
12,400	62,000	.003100	.000100	....	....	
12,600	63,000	.003250	.000150	.000950	.000550	
12,800	64,000	.003950	.000700	....	....	
13,000	65,000	.004700	.000750	....	....	
13,200	66,000	.005600	.000900	....	....	
13,600	68,000	.007800	.002200	....	....	
14,400	72,000	.011750	.003950	....	....	
15,200	76,000	.015100	.003350	....	....	
16,000	80,000	.019250	.004150	....	....	
16,800	84,000	.023350	.004100	....	....	
17,600	88,000	.028500	.005150	....	....	
18,400	92,000	.033650	.005150	....	....	
19,200	96,000	.039650	.006000	....	....	
20,000	100,000	.0550	.015350	....	....	
20,800	104,000	.0750	.0200	....	....	
21,200	106,000	.1200	.0450	....	....	Tensile strength.
19,600	....	....	....	....	....	Load at time of rupture.

General summary.

Specific gravity	7.8656
Tensile strength per square inch of original section .... pounds..	106,000
Elastic limit per square inch of original section .... do....	60,000
Elongation per inch after rupture .... inch...	0.1650
Elongation per inch under strain at elastic limit .... do....	.002500
Reduction in diameter at point of rupture .... do....	.085
Reduction in area after rupture, per centum of original section	30.5
Position of rupture	½ inch from middle of stem
Character of broken surface	granular, with line of silky metal
Elongation of inch sections	''.23*, ''.10

No. 965.

Marks, $^{32\,J_2}_{B\,T_2\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000350	.000100	0.	....	
4,000	20,000	.000450	.000100	0.	....	
5,000	25,000	.000600	.000150	0.	....	
6,000	30,000	.000750	.000150	0.	....	
7,000	35,000	.000950	.000200	0.	....	
8,000	40,000	.001100	.000150	0.	....	
8,400	42,000	.001150	.000050	....	....	
8,800	44,000	.001250	.000100	....	....	
9,200	46,000	.001300	.000050	....	....	
9,600	48,000	.001350	.000050	....	....	
10,000	50,000	.001400	.000050	0.	....	
10,400	52,000	.001550	.000150	....	....	
10,600	53,000	.001600	.000050	....	....	
10,800	54,000	.001650	.000050	....	....	
11,000	55,000	.001700	.000050	....	....	
11,200	56,000	.001800	.000100	0.	....	
11,400	57,000	.001850	.000050	....	....	Elastic limit.
11,600	58,000	.002800	.000950	....	....	
11,800	59,000	.003100	.000300	....	....	
12,000	60,000	.003950	.000850	.001500	.001500	
12,400	62,000	.005750	.001800	....	....	
12,800	64,000	.007750	.002000	....	....	
13,600	68,000	.012000	.004250	....	....	
14,400	72,000	.016550	.004550	....	....	
15,200	76,000	.020750	.004200	....	....	
16,000	80,000	.025750	.005000	....	....	
16,800	84,000	.033000	.007250	....	....	
17,600	88,000	.039000	.006000	....	....	
18,400	92,000	.053000	.014000	....	....	
19,200	96,000	.0700	.0170	....	....	
19,880	99,400	.1100	.0400	....	....	Tensile strength.
17,300	....	....	....	....	....	Load at time of rupture.

General summary.

Tensile strength per square inch of original section..................................pounds.. 99,400
Elastic limit per square inch of original section ....do... 57,000
Elongation per inch after rupture...... ....inch.. 0.1850
Elongation per inch under strain at elastic limit ....do... .001850
Reduction in diameter at point of rupture..do... .125
Reduction in area after rupture, per centum of original section................................ ... 43.5
Position of rupture.. ″.55 from neck
Character of broken surface..silky, with traces of granulation
Elongation of inch sections...″.28*, ″.09

No. 532.

Marks, $\frac{32\ J_2}{B\ T_2\ M}$.
Length, 4″.47.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000450	.000150	0.	....	
10,000	20,000	.000600	.000150	0.	....	
12,500	25,000	.000750	.000150	0.	....	
15,000	30,000	.000950	.000200	0.	....	
17,500	35,000	.001050	.000100	0.	....	
20,000	40,000	.001200	.000150	0.	....	
20,500	41,000	.001250	.000050	....	....	
21,000	42,000	.001300	.000050	....	....	
21,500	43,000	.001350	.060050	....	....	
22,000	44,000	.001350	0.	....	....	
22,500	45,000	.001400	.000050	0.	....	
23,000	46,000	.001450	.000050	....	....	
23,500	47,000	.001450	0.	....	....	
24,000	48,000	.001500	.000050	....	....	
24,500	49,000	.001550	.000050	....	....	
25,000	50,000	.001600	.000050	0.	....	
25,500	51,000	.001650	.000050	....	....	
26,000	52,000	.051750	.000100	....	....	
26,500	53,000	.001800	.000050	....	....	
27,000	54,000	.001850	.000050	....	....	Elastic limit.
27,500	55,000	.002050	.000200	.000150	.000150	
28,000	56,000	.002400	.000350	....	....	
28,500	57,000	.002850	.000450	....	....	
29,000	58,000	.003500	.000650	....	....	
29,500	59,000	.004500	.001000	....	....	
30,000	60,000	.005400	.000900	.003200	.003050	
50,050	100,100	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section.................................pounds.. 54,000
Compression per inch under stress at elastic limit.................................inch.. 0.001850
Ultimate strength per square inch of original section.................................pounds.. 100,100
Manner of failure.................................triple flexure

No. 986.

Marks, $^{32\ J,}_{M\ T,\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000350	.000250	0.	....	
3,000	15,000	.000550	.000200	0.	....	
4,000	20,000	.000750	.000200	.000050	.000050	
5,000	25,000	.000950	.000200	.000050	0.	
6,000	30,000	.001150	.000200	.000100	.000050	
7,000	35,000	.001350	.000200	.000150	.000050	
8,000	40,000	.001500	.000150	.000150	0.	
9,000	45,000	.001700	.000200	.000150	0.	
10,000	50,000	.001900	.000200	.000150	0.	
11,000	55,000	.002150	.000250	.000200	.000050	
11,200	56,000	.002200	.000050	....	....	
11,400	57,000	.002250	.000050	....	....	
11,600	58,000	.002300	.000050	....	....	
11,800	59,000	.002350	.000050	....	....	
12,000	60,000	.002400	.000050	.000300	.000100	Elastic limit.
12,200	61,000	.002500	.000100	....	....	
12,400	62,000	.002700	.000200	....	....	
12,600	63,000	.003050	.000350	....	....	
12,800	64,000	.003250	.000200	....	....	
13,000	65,000	.003500	.000250	.001100	.000800	
13,200	66,000	.003900	.000400	....	....	
13,400	67,000	.004500	.000600	....	....	
13,600	68,000	.006200	.001700	....	....	
14,000	70,000	.008350	.002150	.005300	.004200	
14,400	72,000	.009250	.000900	....	....	
14,800	74,000	.011500	.002250	....	....	
15,200	76,000	.013200	.001700	....	....	
15,600	78,000	.015750	.000550	....	....	
16,000	80,000	.017500	.001750	....	....	
16,400	82,000	.020500	.003000	....	....	
16,800	84,000	.022150	.001650	....	....	
17,200	86,000	.024200	.002050	....	....	
17,600	88,000	.026100	.001900	....	....	
18,000	90,000	.028650	.002550	....	....	
18,400	92,000	.033750	.005100	....	....	
18,800	94,000	.036350	.002600	....	....	
19,200	96,000	.040750	.004400	....	....	
19,600	98,000	.044750	.004000	....	....	
20,000	100,000	.054250	.009500	....	....	
20,400	102,000	.0600	.005750	....	....	
20,800	104,000	.0650	.0050	....	....	
21,200	106,000	.0900	.0250	....	....	
21,460	107,300	.1150	.0250	....	....	Tensile strength.

General summary.

Specific gravity	7.8590
Tensile strength per square inch of original section .... pounds..	107,300
Elastic limit per square inch of original section .... do...	60,000
Elongation per inch after rupture .... inch..	0 1300
Elongation per inch under strain at elastic limit .... do...	.002400
Reduction in diameter at point of rupture .... do...	.035
Reduction in area after rupture, per centum of original section	13.2
Position of rupture	½ inch from middle of stem
Character of broken surface	granular; line of dull-colored metal at circumference
Elongation of inch sections	″.13*, ″.13

No. 987.

Marks, $\overset{32\ \ J_3}{M\ T_3\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000750	.000300	0.	....	
5,000	25,000	.001050	.000300	.000050	.000050	
6,000	30,000	.001250	.000200	.000150	.000100	
7,000	35,000	.001450	.000200	.000150	0.	
8,000	40,000	.001700	.000250	.000200	.000050	
9,000	45,000	.001950	.000250	.000250	.000050	
10,000	50,000	.002050	.000100	.000250	0.	
10,200	51,000	.002100	.000050	....	....	
10,400	52,000	.002150	.000050	....	....	
10,600	53,000	.002200	.000050	....	....	
10,800	54,000	.002250	.000050	....	....	
11,000	55,000	.002350	.000100	.000300	.000050	
11,200	56,000	.002450	.000100	....	....	
11,400	57,000	.002500	.000050	....	....	Elastic limit.
11,600	58,000	.002600	.000100	....	....	
11,800	59,000	.002700	.000100	....	....	
12,000	60,000	.003050	.000350	.000800	.000500	
12,200	61,000	.003450	.000400	....	....	
12,400	62,000	.003800	.000350	....	....	
12,600	63,000	.004300	.000500	....	....	
12,800	64,000	.005000	.000700	....	....	
13,000	65,000	.005500	.000500	.002700	.001900	
13,200	66,000	.006000	.000500	....	....	
13,400	67,000	.006800	.000800	....	....	
13,600	68,000	.007950	.001150	....	....	
13,800	69,000	.008450	.000500	....	....	
14,000	70,000	.009500	.001050	....	....	
14,400	72,000	.011300	.001800	....	....	
14,800	74,000	.012600	.001300	....	....	
15,200	76,000	.014600	.002000	....	....	
15,600	78,000	.015650	.001050	....	....	
16,000	80,000	.018000	.002350	....	....	
16,400	82,000	.019850	.001850	....	....	
16,800	84,000	.021000	.001150	....	....	
17,200	86,000	.024000	.003000	....	....	
17,600	88,000	.027250	.003250	....	....	
18,000	90,000	.030000	.002750	....	....	
18,400	92,000	.0320	.0020	....	....	
18,800	94,000	.0370	.0050	....	....	
19,200	96,000	.0425	.0055	....	....	
19,600	98,000	.0480	.0055	....	....	
20,000	100,000	.0545	.0065	....	....	
20,400	102,000	.0600	.0055	....	....	
20,800	104,000	.0650	.0050	....	....	
21,200	106,000	.0900	.0250	....	....	
21,450	107,250	.1200	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	107,250
Elastic limit per square inch of original section	do...	57,000
Elongation per inch after rupture	inch..	0.1500
Elongation per inch under strain at elastic limit	do...	.002500
Reduction in diameter at point of rupture	do...	.065
Reduction in area after rupture, per centum of original section		23.9
Position of rupture		[illegible] inch from neck
Character of broken surface		granular; radiating from a point in the circumference
Elongation of inch sections		″.21*, ″.09

No. 529.

Marks, $\frac{32\ J_1}{M\ T_1\ M}$
Length 4''.43.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000300	.000200	0.	....	
7, 500	15, 000	.000400	.000100	0.	....	
10, 000	20, 000	.000550	.000150	0.	....	
12, 500	25, 000	.000750	.000200	0.	....	
15, 000	30, 000	.000900	.000150	—.000050	—.000050	
17, 500	35, 000	.001050	.000150	—.000050	0.	
20, 000	40, 000	.001250	.000200	—.000050	0.	
22, 500	45, 000	.001350	.000100	—.000050	0.	
23, 000	46, 000	.001400	.000050	....	....	
23, 500	47, 000	.001450	.000050	....	....	
24, 000	48, 000	.001450	0.	....	....	
24, 500	49, 000	.001500	.000050	....	....	
25, 000	50, 000	.001550	.000050	0.	.000050	
25, 500	51, 000	.001550	0.	....	....	
26, 000	52, 000	.001600	.000050	....	....	
26, 500	53, 000	.001700	.000100	....	....	
27, 000	54, 000	.001750	.000050	....	....	
27, 500	55, 000	.001800	.000050	0.	0.	
28, 000	56, 000	.001800	0.	....	....	
28, 500	57, 000	.001850	.000050	....	....	
29, 000	58, 000	.001900	.000050	....	....	
29, 500	59, 000	.001950	.000050	....	....	Elastic limit.
30, 000	60, 000	.002100	.000150	.000250	.000250	
30, 500	61, 000	.002300	.000200	....	....	
31, 000	62, 000	.002550	.000250	....	....	
31, 500	63, 000	.002850	.000300	....	....	
32, 000	64, 000	.003400	.000550	....	....	
32, 500	65, 000	.004100	.000700	.001800	.001550	
33, 000	66, 000	.004850	.000750	....	....	
33, 500	67, 000	.005650	.000800	....	....	
34, 000	68, 000	.006600	.000950	....	....	
34, 500	69, 000	.007500	.000550	....	....	
35, 000	70, 000	.007950	.000800	.005500	.003700	
52, 900	105, 800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds..	59, 000
Compression per inch under stress at elastic limit ....inch..	0. 001950
Ultimate strength per square inch of original section ....pounds..	105, 800
Manner of failure	triple flexure

[Additional specimens.]

No. 2082.

Marks, $\overset{32\ J_3}{M\ T_4\ M}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000050	.000050	0.	....	
2,000	10,000	.000150	.000100	0.	....	
3,000	15,000	.000300	.000150	0.	....	
4,000	20,000	.000450	.000150	0.	....	
5,000	25,000	.000600	.000150	0.	....	
6,000	30,000	.000800	.000200	0.	....	
7,000	35,000	.000950	.000150	0.	....	
8,000	40,000	.001150	.000200	0.	....	
9,000	45,000	.001350	.000200	0.	....	
9,200	46,000	.001400	.000050	....	....	
9,400	47,000	.001450	.000050	....	....	
9,600	48,000	.001500	.000050	....	....	
9,800	49,000	.001550	.000050	0.	....	
10,000	50,000	.001600	.000050	....	....	Elastic limit.
10,200	51,000	.001800	.000200	....	....	
10,400	52,000	.002700	.000900	....	....	
10,600	53,000	.003550	.000850	....	....	
10,800	54,000	.004300	.000750	....	....	
11,000	55,000	.005050	.000750	....	....	
11,200	56,000	.006000	.000950	....	....	
11,400	57,000	.006750	.000750	....	....	
11,600	58,000	.007650	.000900	....	....	
11,800	59,000	.008450	.000800	....	....	
12,000	60,000	.009550	.001100	....	....	
12,400	62,000	.011000	.001450	....	....	
12,800	64,000	.012550	.001550	....	....	
13,200	66,000	.014450	.001900	....	....	
13,600	68,000	.016350	.001900	....	....	
14,000	70,000	.018550	.002200	....	....	
14,400	72,000	.020750	.002200	....	....	
14,800	74,000	.022750	.002000	....	....	
15,200	76,000	.025250	.002500	....	....	
15,600	78,000	.028050	.002800	....	....	
16,000	80,000	.030850	.002800	....	....	
16,400	82,000	.034750	.003900	....	....	
16,800	84,000	.038250	,003500	....	....	
17,200	86,000	.042350	.004100	....	....	
17,600	88,000	.047500	.005150	....	....	
18,000	90,000	.054500	.007000	....	....	
18,400	92,000	.062000	.007500	....	....	
18,800	94,000	.9500	.0330	....	....	
19,320	96,600	.1200	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96,600
Elastic limit per square inch of original section	do...	50,000
Elongation per inch after rupture	inch..	0.2150
Elongation per inch under strain at elastic limit	do...	.001600
Reduction in diameter at point of rupture	do...	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		½ inch from middle of stem
Character of broken surface		granular; dull center
Elongation of inch sections		″.29*, ″.14

No. 2083.

Marks, $\overset{32\ J_3}{\mathrm{M\ T_5\ M}}$
Diameter, ".504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000500	.000150	0.	....	
5,000	25,000	.000650	.000150	0.	....	
6,000	30,000	.000850	.000200	0.	....	
7,000	35,000	.001050	.000200	0.	....	
8,000	40,000	.001200	.000150	0.	....	
9,000	45,000	.001350	.000150	0.	....	
9,200	46,000	.001350	0.	....	....	
9,400	47,000	.001400	.000050	....	....	
9,600	48,000	.001450	.000050	....	....	
9,800	49,000	.001500	.000050	....	....	
10,000	50,000	.001600	.000100	0.	....	Elastic limit.
10,200	51,000	.002250	.000650	....	....	
10,400	52,000	.003700	.001450	....	....	
10,600	53,000	.004700	.001000	....	....	
10,800	54,000	.005600	.000900	....	....	
11,000	55,000	.006450	.000850	....	....	
11,200	56,000	.007450	.001000	....	....	
11,400	57,000	.008550	.001100	....	....	
11,600	58,000	.009500	.000950	....	....	
11,800	59,000	.010050	.000550	....	....	
12,000	60,000	.010850	.000800	....	....	
12,400	62,000	.012450	.001600	....	....	
12,800	64,000	.014150	.001700	....	....	
13,200	66,000	.016350	.002200	....	....	
13,600	68,000	.018400	.002050	....	....	
14,000	70,000	.020350	.001950	....	....	
14,400	72,000	.022850	.002500	....	....	
14,800	74,000	.025500	.002650	....	....	
15,200	76,000	.028350	.002850	....	....	
15,600	78,000	.031000	.002650	....	....	
16,000	80,000	.033750	.002750	....	....	
16,400	82,000	.038750	.005000	....	....	
16,800	84,000	.042500	.003750	....	....	
17,200	86,000	.048000	.005500	....	....	
17,600	88,000	.053750	.005750	....	....	
18,000	90,000	.062250	.008500	....	....	
18,400	92,000	.0800	.017750	....	....	
18,800	94,000	.0950	.0150	....	....	
18,920	94,600	.1350	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	94,600
Elastic limit per square inch of original section	do ..	50,000
Elongation per inch after rupture	inch..	0.2150
Elongation per inch under strain at elastic limit	do...	.001600
Reduction in diameter at point of rupture	do...	.085
Reduction in area after rupture, per centum of original section		30.7
Position of rupture		".10 from middle of stem
Character of broken surface		granular
Diameter ".2 from point of rupture		".39
Elongation of inch sections		".30*, ".13

No. 2084.

Marks, $\overset{32\,J_{3}}{M\,T_{8}\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000300	.000100	0.	....	
4,000	20,000	.000500	.000200	0.	....	
5,000	25,000	.000650	.000150	0.	....	
6,000	30,000	.000850	.000200	0.	....	
7,000	35,000	.001050	.000200	0.	....	
8,000	40,000	.001200	.000150	0.	....	
9,000	45,000	.001350	.000150	....	....	
9,200	46,000	.001400	.000050	....	....	
9,400	47,000	.001400	0.	....	....	
9,600	48,000	.001450	.000050	....	....	
9,800	49,000	.001550	.000100	....	....	Elastic limit.
10,000	50,000	.001800	.000250	....	....	
10,200	51,000	.002500	.000700	....	....	
10,400	52,000	.003300	.000800	....	....	
10,600	53,000	.004350	.001050	....	....	
10,800	54,000	.005300	.000950	....	....	
11,000	55,000	.006350	.001050	....	....	
11,200	56,000	.007150	.000800	....	....	
11,400	57,000	.007900	.000750	....	....	
11,600	58,000	.008700	.000800	....	....	
11,800	59,000	.009600	.000900	....	....	
12,000	60,000	.014000	.000800	....	....	
12,400	62,000	.012100	.001700	....	....	
12,800	64,000	.014050	.001950	....	....	
13,200	66,000	.015700	.001650	....	....	
13,600	68,000	.018000	.002300	....	....	
14,000	70,000	.020500	.002500	....	....	
14,400	72,000	.022500	.002000	....	....	
14,800	74,000	.024950	.002450	....	....	
15,200	76,000	.027750	.002800	....	....	
15,600	78,000	.030150	.002400	....	....	
16,000	80,000	.034150	.004000	....	....	
16,400	82,000	.037700	.003550	....	....	
16,800	84,000	.041850	.004150	....	....	
17,200	86,000	.047000	.005150	....	....	
17,600	88,000	.053500	.006500	....	....	
18,000	90,000	.060600	.007100	....	....	
18,400	92,000	.0700	.0094	....	....	
18,800	94,000	.0950	.0250	....	....	
18,850	94,250	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	94,250
Elastic limit per square inch of original section	do...	49,600
Elongation per inch after rupture	inch...	0.1050
Elongation per inch under strain at elastic limit	do...	.001550
Reduction in diameter at point of rupture	do...	.035
Reduction in area after rupture, per centum of original section		13.2
Position of rupture		¼ inch from neck
Character of broken surface		granular; line of dull-colored metal across broken surface
Elongation of inch sections		″,12*, ″.09

[Additional specimens.]

No. 2396.

Marks, $\overset{32\ J_2}{M\ T_7\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	. 000150	. 000150	0.	....	
2, 000	10, 000	. 000300	. 000150	0.	....	
3, 000	15, 000	. 000500	. 000200	0.	....	
4, 000	20, 000	. 000650	. 000150	0.	....	
5, 000	25, 000	. 000800	. 000150	0.	....	
6, 000	30, 000	. 000950	. 000150	0.	....	
7, 000	35, 000	. 001150	. 000200	....	....	
8, 000	40, 000	. 001350	. 000200	....	....	
9, 000	45, 000	. 001550	. 000200	....	....	
9, 200	46, 000	. 001600	. 000050	....	....	
9, 400	47, 000	. 001650	. 000050	....	....	
9, 600	48, 000	. 001650	0.	....	....	
9, 800	49, 000	. 001700	. 000050	....	....	
10, 000	50, 000	. 001800	. 000100	....	....	
10, 200	51, 000	. 001900	. 000100	....	....	Elastic limit.
10, 400	52, 000	. 002100	. 000200	....	....	
10, 600	53, 000	. 002550	. 000450	....	....	
10, 800	54, 000	. 003100	. 000550	....	....	
11, 000	55, 000	. 004050	. 000950	....	....	
11, 200	56, 000	. 004850	. 000800	....	....	
11, 400	57, 000	. 005650	. 000800	....	....	
11, 600	58, 000	. 006300	. 000650	....	....	
11, 800	59, 000	. 007150	. 000850	....	....	
12, 000	60, 000	. 008100	. 000950	....	....	
12, 400	62, 000	. 009750	. 001650	....	....	
12, 800	64, 000	. 011650	. 001900	....	....	
13, 200	66, 000	. 013500	. 001850	....	....	
13, 600	68, 000	. 015100	. 001600	....	....	
14, 000	70, 000	. 017100	. 002000	....	....	
14, 400	72, 000	. 019100	. 002000	....	....	
14, 800	74, 000	. 020750	. 001650	....	....	
15, 200	76, 000	. 022650	. 001900	....	....	
15, 600	78, 000	. 025100	. 002450	....	....	
16, 000	80, 000	. 027550	. 002450	....	....	
16, 400	82, 000	. 030250	. 002700	....	....	
16, 800	84, 000	. 033500	. 003250	....	....	
17, 200	86, 000	. 036500	. 003000	....	....	
17, 600	88, 000	. 041050	. 004550	....	....	
18, 000	90, 000	. 045500	. 004450	....	....	
18, 400	92, 000	. 0500	. 0045	....	....	
18, 800	94, 000	. 0600	. 0100	....	....	
19, 200	96, 000	. 0650	. 0050	....	....	
19, 600	98, 000	. 0800	. 0150	....	....	
19, 940	99, 700	. 1200	. 0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	99, 700
Elastic limit per square inch of original section	do...	51, 000
Elongation per inch after rupture	inch..	0. 2050
Elongation per inch under strain at elastic limit	do...	. 001900
Reduction in diameter at point of rupture	do...	. 125
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		1″. 05 from neck
Character of broken surface		silky, interspersed with granular metal
Elongation of inch sections		″. 26^{a}, ″. 15

No. 2397.

Marks, $\overset{32\ J_1}{M\ T_1\ M}$

Diameter, ″.505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001000	.000150	....	....	
8,000	40,000	.001150	.000150	....	....	
9,000	45,000	.001400	.000250	....	....	
9,600	48,000	.001500	.000100	....	....	
9,800	49,000	.001600	.000100	....	....	Elastic limit.
10,000	50,000	.002000	.000400	....	....	
10,200	51,000	.002450	.000450	....	....	
10,400	52,000	.003200	.000750	....	....	
10,600	53,000	.004200	.001000	....	....	
10,800	54,000	.005150	.000950	....	....	
11,000	55,000	.005950	.000800	....	....	
11,200	56,000	.006700	.000750	....	....	
11,400	57,000	.007700	.001000	....	....	
11,600	58,000	.008600	.000900	....	....	
11,800	59,000	.009150	.000550	....	....	
12,000	60,000	.010100	.000950	....	....	
12,400	62,000	.012100	.002000	....	....	
12,800	64,000	.014100	.002000	....	....	
13,200	66,000	.016250	.002150	....	....	
13,600	68,000	.018100	.001850	....	....	
14,000	70,000	.019750	.001650	....	....	
14,400	72,000	.021600	.001850	....	....	
14,800	74,000	.024000	.002400	....	....	
15,200	76,000	.026550	.002550	....	....	
15,600	78,000	.029500	.002950	....	....	
16,000	80,000	.033000	.003500	....	....	
16,400	82,000	.036700	.003700	....	....	
16,800	84,000	.040000	.003300	....	....	
17,200	86,000	.043750	.003750	....	....	
17,600	88,000	.049000	.005250	....	....	
18,000	90,000	.0550	.0060	....	....	
18,400	92,000	.0650	.0100	....	....	
18,800	94,000	.0800	.0150	....	....	
19,200	96,000	.1050	.0250	....	....	
19,280	96,400	.1300	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	96,400
Elastic limit per square inch of original section..........do...	49,000
Elongation per inch after rupture..........inch..	0.2200
Elongation per inch under strain at elastic limit..........do...	.001600
Reduction in diameter at point of rupture..........do...	.125
Reduction in area after rupture, per centum of original section..........	43.3
Position of rupture..........	″.70 from neck
Character of broken surface..........	silky, with traces of granulation
Elongation of inch sections..........	″.31*, ″.13

No. 2398.

Marks, $\overset{32\,J_3}{\text{M T, M}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000200	.000200	0.	....	
2, 000	10, 000	.000400	.000200	0.	....	
3, 000	15, 000	.000600	.000200	0.	....	
4, 000	20, 000	.000750	.000150	0.	....	
5, 000	25, 000	.000900	.000150	0.	....	
6, 000	30, 000	.001100	.000200	0.	....	
7, 000	35, 000	.001250	.000150	....	....	
8, 000	40, 000	.001400	.000150	....	....	
9, 000	45, 000	.001600	.000200	....	....	
9, 200	46, 000	.001650	.000050	....	....	
9, 400	47, 000	.001650	0.	....	....	
9, 600	48, 000	.001700	.000050	....	....	
9, 800	49, 000	.001800	.000100	....	....	Elastic limit.
10, 000	50, 000	.002150	.000350	....	....	
10, 200	51, 000	.003300	.001150	....	....	
10, 400	52, 000	.003700	.000400	....	....	
10, 600	53, 000	.004630	.000930	....	....	
10, 800	54, 000	.005500	.000850	....	....	
11, 000	55, 000	.006250	.000750	....	....	
11, 200	56, 000	.007100	.000850	....	....	
11, 400	57, 000	.008100	.001000	....	....	
11, 600	58, 000	.008750	.000650	....	....	
11, 800	59, 000	.009600	.000850	....	....	
12, 000	60, 000	.010400	.000800	....	....	
12, 400	62, 000	.012500	.002100	....	....	
12, 800	64, 000	.014350	.001850	....	....	
13, 200	66, 000	.016050	.001700	....	....	
13, 600	68, 000	.018250	.002200	....	....	
14, 000	70, 000	.020250	.002000	....	....	
14, 400	72, 000	.022500	.002250	....	....	
14, 800	74, 000	.025000	.002500	....	....	
15, 200	76, 000	.027250	.002250	....	....	
15, 600	78, 000	.030000	.002750	....	....	
16, 000	80, 000	.033500	.003500	....	....	
16, 400	82, 000	.037100	.003600	....	....	
16, 800	84, 000	.040850	.003750	....	....	
17, 200	86, 000	.046500	.005650	....	....	
17, 600	88, 000	.052500	.006000	....	....	
18, 000	90, 000	.0600	.0075	....	....	
18, 400	92, 000	.0650	.0050	....	....	
18, 800	94, 000	.0850	.0200	....	....	
19, 050	95, 250	.1150	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..................................pounds.. 95, 250
Elastic limit per square inch of original section..do... 49, 000
Elongation per inch after rupture...inch.. 0. 1450
Elongation per inch under strain at elastic limit...do... .001800
Reduction in diameter at point of rupture...do... .055
Reduction in area after rupture, per centum of original section.................................... 20. 5
Position of rupture...″.80 from neck
Character of broken surface..granular, with line of flaky metal
Elongation of inch sections..″.18*, ″.11

No. 966.

Marks, $\overset{32\ J_4}{M\ T_1\ M}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000050	.000050	0.	....	
2, 000	10, 000	.000150	.000100	0.	....	
3, 000	15, 000	.000300	.000150	0.	....	
4, 000	20, 000	.000450	.000150	0.	....	
5, 000	25, 000	.000550	.000100	0.	....	
6, 000	30, 000	.000650	.000100	0.	....	
7, 000	35, 000	.000850	.000200	0.	....	
8, 000	40, 000	.001000	.000150	0.	....	
8, 800	44, 000	.001200	.000200	....	....	
9, 200	46, 000	.001250	.000050	....	....	
9, 600	48, 000	.001300	.000050	....	....	
10, 000	50, 000	.001350	.000050	0.	....	
10, 400	52, 000	.001450	.000100	....	....	
10, 800	54, 000	.001550	.000100	....	....	
11, 200	56, 000	.001600	.000050	....	....	
11, 600	58, 000	.001750	.000150	....	....	
11, 800	59, 000	.001800	.000050	....	....	Elastic limit.
12, 000	60, 000	.002000	.000200	.000100	.000100	
12, 200	61, 000	.002250	.000250	....	....	
12, 400	62, 000	.002550	.000300	....	....	
12, 600	63, 000	.003250	.000700	....	....	
12, 800	64, 000	.004000	.000750	....	....	
13, 600	68, 000	.007750	.003750	....	....	
14, 400	72, 000	.012250	.004500	....	....	
15, 200	76, 000	.015750	.003500	....	....	
16, 000	80, 000	.019750	.004000	....	....	
16, 800	84, 000	.024500	.004750	....	....	
17, 600	88, 000	.030150	.005650	....	....	
18, 400	92, 000	.036750	.006600	....	....	
19, 200	96, 000	.045000	.008250	....	....	
20, 000	100, 000	.0600	.0150	....	....	
20, 800	104, 000	.0950	.0350	....	....	
20, 820	104, 100	.1000	.0050	....	....	Tensile strength.

General summary.

Specific gravity		7. 8666
Tensile strength per square inch of original section	pounds	104, 100
Elastic limit per square inch of original section	do	59, 000
Elongation per inch after rupture	inch	0. 1050
Elongation per inch under strain at elastic limit	do	.001800
Reduction in diameter at point of rupture	do	.035
Reduction in area after rupture, per centum of original section		13. 5
Position of rupture		".45 from neck
Character of broken surface		granular; line of silky metal near circumference
Elongation of inch sections		".12*, ".09

No. 967.

Marks, $^{32\ J_4}_{M\ T_2\ M}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000050	.000050	0.	....	
2, 000	10, 000	.000100	.000050	0.	....	
3, 000	15, 000	.000300	.000200	0.	....	
4, 000	20, 000	.000450	.000150	0.	....	
5, 000	25, 000	.000600	.000150	0.	....	
6, 000	30, 000	.000800	.000200	0.	....	
7, 000	35, 000	.001000	.000200	0.	....	
8, 000	40, 000	.001200	.000200	0.	....	
8, 800	44, 000	.001350	.000150	....	....	
9, 200	46, 000	.001500	.000150	....	....	
9, 600	48, 000	.001550	.000050	....	....	
10, 000	50, 000	.001650	.000100	0.	....	
10, 400	52, 000	.001750	.000100	....	....	Elastic limit.
10, 800	54, 000	.001950	.000200	....	....	
11, 200	56, 000	.002100	.000150	....	....	
11, 600	58, 000	.002350	.000250	....	....	
12, 000	60, 000	.002900	.000550	.000750	.000750	
12, 400	62, 000	.003850	.000950	....	....	
12, 800	64, 000	.005500	.001650	....	....	
13, 600	68, 000	.008900	.003400	....	....	
14, 400	72, 000	.013000	.004100	....	....	
15, 200	76, 000	.017750	.004750	....	....	
16, 000	80, 000	.021750	.004000	....	....	
16, 800	84, 000	.025000	.003250	....	....	
17, 600	88, 000	.029600	.004600	....	....	
18, 400	92, 000	.031650	.002050	....	....	
19, 200	96, 000	.039500	.007850	....	....	
20, 000	100, 000	.0650	.0255	....	....	
20, 800	104, 000	.1050	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	104, 000
Elastic limit per square inch of original section ....do...	52, 000
Elongation per inch after rupture........inch..	0. 1800
Elongation per inch under strain at elastic limit........do...	.001750
Reduction in diameter at point of rupture........do...	.045
Reduction in area after rupture, per centum of original section........	17
Position of rupture........	at middle of stem
Character of broken surface, granular, radiating from a line of silky metal, which extends from the circumference to the center.	
Elongation of inch sections........	".13, ".23*

No. 533.

Marks, $\frac{32\ J_4}{M\ T,\ M}$
Length, 4″.5.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000500	.000200	0.	....	
10,000	20,000	.000600	.000100	0.	....	
12,500	25,000	.000800	.000200	0.	....	
15,000	30,000	.000950	.000150	0.	....	
17,500	35,000	.001100	.000150	0.	....	
20,000	40,000	.001250	.000150	—.000050	—.000050	
22,500	45,000	.001350	.000100	—.000050	0.	
25,000	50,000	.001500	.000150	—.000100	—.000050	
25,500	51,000	.001500	0.	....	....	
26,000	52,000	.001550	.000050	....	....	
26,500	53,000	.001550	0.	....	....	
27,000	54,000	.001550	0.	....	....	
27,500	55,000	.001600	.000050	—.000150	—.000050	
28,000	56,000	.001600	0.	....	....	
28,500	57,000	.001600	0.	....	....	
29,000	58,000	.001650	.000050	....	....	Elastic limit.
29,500	59,000	.001750	.000100	....	....	
30,000	60,000	.001850	.000100	—.000050	.000100	
30,500	61,000	.002100	.000250	....	....	
31,000	62,000	.002350	.000250	....	....	
31,500	63,000	.003000	.000650	....	....	
32,000	64,000	.003600	.000600	....	....	
32,500	65,000	.004550	..000950	.002300	.002350	
52,000	104,000	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds.	58,000
Compression per inch under stress at elastic limit	do....	0.001650
Ultimate strength per square inch of original section		104,000
Manner of failure		triple flexure

[Additional specimens.]

No. 2085.

Marks, $^{32\ J_4}_{M\ T_4\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000500	.000150	0.	....	
4,000	20,000	.000700	.000200	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.001050	.000200	0.	....	
7,000	35,000	.001200	.000150	.000050	.000050	
8,000	40,000	.001350	.000150	.000050	0.	
9,000	45,000	.001500	.000150	.000050	0.	
9,200	46,000	.001600	.000100	....	....	
9,400	47,000	.001600	0.	....	....	
9,600	48,000	.001650	.000050	....	....	
9,800	49,000	.001700	.000050	....	....	
10,000	50,000	.001800	.000100	.000100	.000050	Elastic limit.
10,200	51,000	.001950	.000150	....	....	
10,400	52,000	.002150	.000200	....	....	
10,600	53,000	.003500	.001350	....	....	
10,800	54,000	.005050	.001550	....	....	
11,000	55,000	.006100	.001050	....	....	
11,200	56,000	.007200	.001100	....	....	
11,400	57,000	.008000	.000800	....	....	
11,600	58,000	.008950	.000950	....	....	
11,800	59,000	.009600	.000650	....	....	
12,000	60,000	.010250	.000650	....	....	
12,400	62,000	.012250	.002000	....	....	
12,800	64,000	.014150	.001900	....	....	
13,200	66,000	.015850	.001700	....	....	
13,600	68,000	.017800	.001950	....	....	
14,000	70,000	.020000	.002200	....	....	
14,400	72,000	.022500	.002500	....	....	
14,800	74,000	.025250	.002750	....	....	
15,200	76,000	.028250	.003000	....	....	
15,600	78,000	.031100	.002850	....	....	
16,000	80,000	.034250	.003150	....	....	
16,400	82,000	.038250	.004000	....	....	
16,800	84,000	.042500	.004250	....	....	
17,200	86,000	.047900	.005400	....	....	
17,600	88,000	.054000	.006100	....	....	
18,000	90,000	.062000	.008000	....	....	
18,400	92,000	.0700	.0080	....	....	
18,800	94,000	.1000	.0300	....	....	
18,870	94,350	.1200	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	94,350
Elastic limit per square inch of original section..........do...	50,000
Elongation per inch after rupture..........inch..	0.2100
Elongation per inch under strain at elastic limit..........do...	.001800
Reduction in diameter at point of rupture..........do ..	.115
Reduction in area after rupture, per centum of original section..........	40.3
Position of rupture..........	″.4 from neck
Character of broken surface..........	granular; dull center
Elongation of inch sections..........	″.25, ″.17

No. 2086.

Marks, $\overset{32\ J_4}{M\ T_5\ M}$

Diameter, ".505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000350	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000700	.000100	0.	....	
6, 000	30, 000	.000900	.000200	0.	....	
7, 000	35, 000	.001150	.000250	0.	....	
8, 000	40, 000	.001250	.000100	0.	....	
9, 000	45, 000	.001400	.000150	0.	....	
9, 200	46, 000	.001400	0.	....	....	
9, 400	47, 000	.001450	.000050	....	....	
9, 600	48, 000	.001550	.000100	....	....	
9, 800	49, 000	.001600	.000050	....	....	
10, 000	50, 000	.001650	.000050	....	....	Elastic limit.
10, 200	51, 000	.001900	.000250	....	....	
10, 400	52, 000	.004350	.002450	....	....	
10, 600	53, 000	.005700	.001350	....	....	
10, 800	54, 000	.006700	.001000	....	....	
11, 000	55, 000	.007700	.001000	....	....	
11, 200	56, 000	.008600	.000900	....	....	
11, 400	57, 000	.009350	.000750	....	....	
11, 600	58, 000	.010150	.000800	....	....	
11, 800	59, 000	.011150	.001000	....	....	
12, 000	60, 000	.012150	.001000	....	....	
12, 400	62, 000	.014050	.001900	....	....	
12, 800	64, 000	.015950	.001900	....	....	
13, 200	66, 000	.018050	.002100	....	....	
13, 600	68, 000	.020600	.002550	....	....	
14, 000	70, 000	.023000	.002400	....	....	
14, 400	72, 000	.025500	.002500	....	....	
14, 800	74, 000	.028750	.003250	....	....	
15, 200	76, 000	.032500	.003750	....	....	
15, 600	78, 000	.035650	.003150	....	....	
16, 000	80, 000	.039550	.003900	....	....	
16, 400	82, 000	.044550	.005000	....	....	
16, 800	84, 000	.050000	.005450	....	....	
17, 200	86, 000	.057500	.007500	....	....	
17, 600	88, 000	.0650	.0075	....	....	
18, 000	90, 000	.0850	.0200	....	....	
18, 380	91, 900	.1350	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	91, 900
Elastic limit per square inch of original section	do...	50, 000
Elongation per inch after rupture	inch..	0. 2050
Elongation per inch under strain at elastic limit	do...	.001650
Reduction in diameter at point of rupture	do...	.115
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		".55 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		".28*, ".13

No. 2087.

Marks, $\overset{32}{\text{M}}\ \overset{\text{J}_4}{\text{T}_6}\ \text{M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000300	.000100	0.	....	
4,000	20,000	.000450	.000150	0.	....	
5,000	25,000	.000650	.000200	0.	....	
6,000	30,000	.000850	.000200	0.	....	
7,000	35,000	.001000	.000150	0.	....	
8,000	40,000	.001150	.000150	0.	....	
9,000	45,000	.001400	.000250	0.	....	
9,200	46,000	.001400	0.	....	....	
9,400	47,000	.001450	.000050	....	....	
9,600	48,000	.001500	.000050	....	....	
9,800	49,000	.001550	.000050	....	....	
10,000	50,000	.001650	.000100	.000050	.000050	Elastic limit.
10,200	51,000	.001850	.000200	....	....	
10,400	52,000	.004000	.002150	....	....	
10,600	53,000	.005650	.001650	....	....	
10,800	54,000	.006600	.000950	....	....	
11,000	55,000	.007500	.000900	....	....	
11,200	56,000	.008200	.000700	....	....	
11,400	57,000	.008900	.000700	....	....	
11,600	58,000	.009750	.000850	....	....	
11,800	59,000	.010600	.000850	....	....	
12,000	60,000	.011350	.000750	....	....	
12,400	62,000	.013500	.002150	....	....	
12,800	64,000	.015050	.001550	....	....	
13,200	66,000	.017450	.002400	....	....	
13,600	68,000	.019550	.002100	....	....	
14,000	70,000	.022000	.002450	....	....	
14,400	72,000	.024750	.002750	....	....	
14,800	74,000	.027500	.002750	....	....	
15,200	76,000	.030250	.002750	....	....	
15,600	78,000	.033500	.003250	....	....	
16,000	80,000	.037250	.003750	....	....	
16,400	82,000	.041500	.004250	....	....	
16,800	84,000	.046500	.005000	....	....	
17,200	86,000	.052500	.006000	....	....	
17,600	88,000	.060000	.007500	....	....	
18,000	90,000	.0700	.0100	....	....	
18,400	92,000	.0900	.0200	....	....	
18,670	93,350	.1350	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	93,350
Elastic limit per square inch of original section	do....	50,000
Elongation per inch after rupture	inch..	0.2250
Elongation per inch under strain at elastic limit	do....	.001650
Reduction in diameter at point of rupture	do....	.105
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		″.05 from middle of stem
Character of broken surface		granular; dull spot near circumference
Elongation of inch sections		″.28*, ″.17

No. 988.

Marks, $\overset{32\ J_5}{M\ T,\ M}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000300	.000100	0.	....	
4,000	20,000	.000450	.000150	0.	....	
5,000	25,000	.000550	.000100	0.	....	
6,000	30,000	.000700	.000150	0.	....	
7,000	35,000	.000850	.000150	0.	....	
8,000	40,000	.001050	.000200	0.	....	
9,000	45,000	.001200	.000150	0.	....	
10,000	50,000	.001400	.000200	0.	....	
11,000	55,000	.001600	.000200	0.	....	
11,200	56,000	.001650	.000050	....	....	Elastic limit.
11,400	57,000	.001950	.000300	....	....	
11,600	58,000	.002600	.000650	....	....	
11,800	59,000	.003500	.000900	....	....	
12,000	60,000	.004450	.000950	.002500	.002500	
12,400	62,000	.006300	.001850	....	....	
12,800	64,000	.0080	.0017	....	....	
13,200	66,000	.0100	.0020	....	....	
13,600	68,000	.0115	.0015	....	....	
14,000	70,000	.0125	.0010	....	....	
14,400	72,000	.0140	.0015	....	....	
14,800	74,000	.0160	.0020	....	....	
15,200	76,000	.0175	.0015	....	....	
15,600	78,000	.0200	.0025	....	....	
16,000	80,000	.0220	.0020	....	....	
16,400	82,000	.0240	.0020	....	....	
16,800	84,000	.0265	.0025	....	....	
17,200	86,000	.0290	.0025	....	....	
17,600	88,000	.0315	.0025	....	....	
18,000	90,000	.0350	.0035	....	....	
18,400	92,000	.0380	.0030	....	....	
18,600	93,000	.0405	.0025	....	....	
19,200	96,000	.0525	.0120	....	....	
19,600	98,000	.0700	.0175	....	....	
20,000	100,000	.1000	.0300	....	....	
20,180	100,900	.1250	.0250	....	....	Tensile strength.

General summary.

Specific gravity		7.8750
Tensile strength per square inch of original section	pounds..	100,900
Elastic limit per square inch of original section	do....	56,000
Elongation per inch after rupture	inch..	0.1950
Elongation per inch under strain at elastic limit	do....	.001650
Reduction in diameter at point of rupture	do....	.104
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		″.50 from middle of stem
Character of broken surface		granular; dull silky center
Elongation of inch sections		″.28*, ″.11

No. 989.

Marks, $\overset{32\ J_1}{M\ T_1\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000050	.000050	0.	....	
2,000	10,000	.000200	.000150	0.	....	
3,000	15,000	.000500	.000300	0.	....	
4,000	20,000	.000700	.000200	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.001050	.000200	.000050	.000050	
7,000	35,000	.001200	.000150	.000050	0.	
8,000	40,000	.001400	.000200	.000100	.000050	
9,000	45,000	.001600	.000200	.000100	0.	
10,000	50,000	.001850	.000250	.000100	0.	
11,000	55,000	.002000	.000150	.000100	0.	
11,200	56,000	.002050	.000050	....	....	Elastic limit.
11,400	57,000	.002750	.000700	....	....	
11,600	58,000	.003500	.000750	....	....	
11,800	59,000	.004550	.001050	....	....	
12,000	60,000	.005250	.000700	.002900	.002800	
12,400	62,000	.0070	.001750	....	....	
12,800	64,000	.0085	.0015	....	....	
13,200	66,000	.0110	.0025	....	....	
13,600	68,000	.0125	.0015	....	....	
14,000	70,000	.0145	.0020	....	....	
14,400	72,000	.0170	.0025	....	....	
14,800	74,000	.0195	.0025	....	....	
15,200	76,000	.0220	.0025	....	....	
15,600	78,000	.0245	.0025	....	....	
16,000	80,000	.0285	.0040	....	....	
16,400	82,000	.0310	.0025	....	....	
16,800	84,000	.0340	.0030	....	....	
17,200	86,000	.0380	.0040	....	....	
17,600	88,000	.0420	.0040	....	....	
18,000	90,000	.0450	.0030	....	....	
18,400	92,000	.0490	.0040	....	....	
18,800	94,000	.0565	.0075	....	....	
19,200	96,000	.0600	.0035	....	....	
19,600	98,000	.0750	.0150	....	....	
20,000	100,000	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	100,000
Elastic limit per square inch of original section	do....	56,000
Elongation per inch after rupture	inch..	0.1350
Elongation per inch under strain at elastic limit	do....	.002050
Reduction in diameter at point of rupture	do....	.055
Reduction in area after rupture, per centum of original section		20.5
Position of rupture		¼ inch from middle of stem
Character of broken surface		granular; line of dull-colored metal extends across the broken surface
Elongation of inch sections		″.17*, ″.10

No. 530.

Marks, $^{32\ J_6}_{M\ T_2\ M}$
Length, 4''.50.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000550	.000150	0.	....	
12, 500	25, 000	.000750	.000200	0.	....	
15, 000	30, 000	.000850	.000100	0.	....	
17, 500	35, 000	.001000	.000150	0.	....	
20, 000	40, 000	.001150	.000150	0.	....	
22, 500	45, 000	.001300	.000150	0.	....	
25, 000	50, 000	.001550	.000250	0.	....	
25, 500	51, 000	.001600	.000050	....	....	
26, 000	52, 000	.001800	.000200	....	....	
26, 500	53, 000	.001850	.000050	....	....	
27, 000	54, 000	.001900	.000050	....	....	Elastic limit.
27, 500	55, 000	.002050	.000150	.000300	.000300	
28, 000	56, 000	.002600	.000550	....	....	
28, 500	57, 000	.003450	.000850	....	....	
29, 000	58, 000	.004250	.000800	....	....	
29, 500	59, 000	.005850	.001600	....	....	
30, 000	60, 000	.007500	.001650	.005150	.004850	
49, 650	99, 300	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	54, 000
Compression per inch under stress at elastic limit	inch..	0.001900
Ultimate strength per square inch of original section	pounds..	99, 300
Manner of failure		triple flexure

NEW JACKET NO. 5.

No. 2262.

Marks, $^{32\,J_4}_{B\,T_4\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000650	.000200	0.	....	
5, 000	25, 000	.000800	.000150	0.	....	
6, 000	20, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001150	.000200	0.	....	
8, 000	40, 000	.001300	.000150	0.	....	
9, 000	45, 000	.001450	.000150	0.	....	
10, 000	50, 000	.001600	.000150	0.	....	
10, 200	51, 000	.001600	0.	....	....	
10, 400	52, 000	.001650	.000050	....	....	
10, 600	53, 000	.001700	.000050	....	....	
10, 800	54, 000	.001800	.000100	....	....	
11, 000	55, 000	.001850	.000050	....	....	Elastic limit.
11, 200	56, 000	.008250	.006400	....	....	
11, 400	57, 000	.008950	.000700	....	....	
11, 600	58, 000	.009900	.000950	....	....	
11, 800	59, 000	.010700	.000800	....	....	
12, 000	60, 000	.011250	.000550	....	....	
12, 400	62, 000	.013000	.001750	....	....	
12, 800	64, 000	.015100	.002100	....	....	
13, 200	06, 000	.017050	.001950	....	....	
13, 600	68, 000	.018750	.001700	....	....	
14, 000	70, 000	.021150	.002400	....	....	
14, 400	72, 000	.023250	.002100	....	....	
14, 800	74, 000	.025650	.002400	....	....	
15, 200	76, 000	.028700	.003050	....	....	
15, 600	78, 000	.031250	.002550	....	....	
16, 000	80, 000	.034750	.003500	....	....	
16, 400	82, 000	.038250	.003500	....	....	
16, 800	84, 000	.043050	.004800	....	....	
17, 200	86, 000	.048250	.005200	....	....	
17, 600	88, 000	.054000	.005750	....	....	
18, 000	90, 000	.0650	.0110	....	....	
18, 400	92, 000	.0750	.0100	....	....	
18, 800	94, 000	.0950	.0200	....	....	
19, 160	95, 800	.1450	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	95, 800
Elastic limit per square inch of original section	do....	55, 000
Elongation per inch after rupture	inch..	0. 2500
Elongation per inch under strain at elastic limit	do....	.001850
Reduction in diameter at point of rupture	do....	.145
Reduction in area after rupture, per centum of original section		49. 1
Position of rupture		″.05 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″. 28*, ″. 22

No. 2263.

Marks, $\text{B}\,\overset{32}{\text{T}},\overset{\text{J},}{\text{M}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001150	.000200	0.	....	
8,000	40,000	.001350	.000200	0.	....	
9,000	45,000	.001550	.000200	0.	....	
10,000	50,000	.001750	.000200	0.	....	
10,200	51,000	.001800	.000050	....	....	
10,400	52,000	.001850	.000050	....	....	
10,600	53,000	.001900	.000050	....	....	
10,800	54,000	.002000	.000100	....	....	
11,000	55,000	.002050	.000050	....	....	
11,200	56,000	.002100	.000050	....	....	
11,400	57,000	.002100	0.	....	....	
11,600	58,000	.002200	.000100	....	....	
11,800	59,000	.002250	.000050	....	....	
12,000	60,000	.002250	0.	....	....	Elastic limit.
12,200	61,000	.002400	.000150	....	....	
12,400	62,000	.009000	.006600	....	....	
12,600	63,000	.009550	.000550	....	....	
12,800	64,000	.010250	.000700	....	....	
13,000	65,000	.011100	.000850	....	....	
13,200	66,000	.012000	.000900	....	....	
13,400	67,000	.012850	.000850	....	....	
13,600	68,000	.013600	.000750	....	....	
13,800	69,000	.014550	.000950	....	....	
14,000	70,000	.015500	.000950	....	....	
14,400	72,000	.017150	.001650	....	....	
14,800	74,000	.019150	.002000	....	....	
15,200	76,000	.021150	.002000	....	....	
15,600	78,000	.023150	.002000	....	....	
16,000	80,000	.025300	.002150	....	....	
16,400	82,000	.028250	.002950	....	....	
16,800	84,000	.031150	.002900	....	....	
17,200	86,000	.034500	.003350	....	....	
17,600	88,000	.037250	.002750	....	....	
18,000	90,000	.042000	.004750	....	....	
18,400	92,000	.046050	.004050	....	....	
18,800	94,000	.052000	.005950	....	....	
19,200	96,000	.0600	.0080	....	....	
19,600	98,000	.0650	.0050	....	....	
20,000	100,000	.0850	.0200	....	....	
20,330	101,650	.1400	.0550	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	101,650
Elastic limit per square inch of original section	do	60,000
Elongation per inch after rupture	inch	.02050
Elongation per inch under strain at elastic limit	do	.002250
Reduction in diameter at point of rupture	do	.075
Reduction in area after rupture, per centum of original section		27.4
Position of rupture		″.95 from neck
Character of broken surface		granular; radiating from a dull spot at circumference
Elongation of inch sections		″.19*, ″.22*

No. 633.

Marks, $^{32\ \mathrm{J}_5}_{\mathrm{B\ T}_5}\mathrm{M}$
Length, 4''.505.
Diameter, ''.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000200	.000200	0.	....	
5, 000	10, 000	.000400	.000200	0.	....	
7, 500	15, 000	.000567	.000167	0.	....	
10, 000	20, 000	.000733	.000166	0.	....	
12, 500	25, 000	.000900	.000167	0.	....	
15, 000	30, 000	.001067	.000167	0.	....	
17, 500	35, 000	.001267	.000200	0.	....	
20, 000	40, 000	.001433	.000166	0.	....	
22, 500	45, 000	.001600	.000167	0.	....	
23, 000	46, 000	.001633	.000033	....	....	
23, 500	47, 000	.001667	.000034	....	....	
24, 000	48, 000	.001700	.000033	....	....	
24, 500	49, 000	.001767	.000067	....	....	
25, 000	50, 000	.001800	.000033	0.	....	
25, 500	51, 000	.001833	.000033	....	....	
26, 000	52, 000	.001933	.000100	....	....	
26, 500	53, 000	.001967	.000034	....	....	
27, 000	54, 000	.002[illegible]00	.000033	....	....	
27, 500	55, 000	.002100	.000100	.000033	.000033	Elastic limit.
28, 000	56, 000	.002233	.000133	....	....	
28, 500	57, 000	.002633	.000400	....	....	
29, 000	58, 000	.007500	.004867	....	....	
29, 500	59, 000	.008133	.000633	....	....	
30, 000	60, 000	.008333	.000200	....	....	
50, 000	100, 000	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	55, 000
Compression per inch under stress at elastic limit	inch..	0. 002100
Ultimate strength per square inch of original section	pounds..	100, 000
Manner of failure		triple flexure

Marks, $\overset{32\ J_c}{M\ T_1\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000500	.000100	0.	....	
5,000	25,000	.000650	.000150	0.	....	
6,000	30,000	.000800	.000150	0.	....	
7,000	35,000	.000950	.000150	0.	....	
8,000	40,000	.001100	.000150	0.	....	
9,000	45,000	.001200	.000100	....	....	
9,200	46,000	.001250	.000050	....	....	
9,400	47,000	.001350	.000100	....	....	
9,600	48,000	.001400	.000050	....	....	Elastic limit.
9,800	49,000	.001550	.000150	....	....	
10,000	50,000	.001750	.000200	.000250	.000250	
10,200	51,000	.002150	.000400	....	....	
10,400	52,000	.002700	.000515	....	....	
10,600	53,000	.003350	.000650	....	....	
10,800	54,000	.004050	.000700	....	....	
11,000	55,000	.005200	.001150	.003200	.002950	
11,200	56,000	.006200	.001000	....	....	
11,400	57,000	.006700	.000500	....	....	
11,600	58,000	.007350	.000650	....	....	
11,800	59,000	.008400	.001050	....	....	
12,000	60,000	.009400	.001000	.007350	.004150	
12,400	62,000	.011350	.001950	....	....	
12,800	64,000	.013200	.001850	....	....	
13,200	66,000	.015350	.002150	....	....	
13,600	68,000	.018400	.003050	....	....	
14,000	70,000	.019500	.001100	....	....	
14,400	72,000	.022000	.002500	....	....	
14,800	74,000	.024500	.002500	....	....	
15,200	76,000	.027500	.003000	....	....	
15,600	78,000	.030250	.002750	....	....	
16,000	80,000	.033750	.003500	....	....	
16,400	82,000	.038000	.004250	....	....	
16,800	84,000	.042450	.004450	....	....	
17,200	86,000	.046900	.004450	....	....	
17,600	88,000	.053000	.006100	....	....	
18,000	90,000	.064550	.011550	....	....	
18,400	92,000	.0750	.010450	....	....	
18,890	94,450	.1200	.0450	....	....	Tensile strength.

General summary.

Specific gravity		7.8593
Tensile strength per square inch of original section	pounds..	94,450
Elastic limit per square inch of original section	do....	48,000
Elongation per inch after rupture	inch..	0.2100
Elongation per inch under strain at elastic limit	do....	.001400
Reduction in diameter at point of rupture	do....	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		″.22*, ″.20*

No. 1102.

Marks, $\overset{32}{\text{M}}\ \overset{\text{J}_6}{\text{T}_2}\ \text{M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000500	.000150	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001150	.000150	0.	....	
8,000	40,000	.001300	.000150	0.	....	
9,000	45,000	.001500	.000200	0.	....	
9,200	46,000	.001550	.000050	....	....	
9,400	47,000	.001600	.000050	....	....	
9,600	48,000	.001700	.000100	....	....	Elastic limit.
9,800	49,000	.001950	.000250	....	....	
10,000	50,000	.002600	.000650	.000850	.000850	
10,200	51,000	.003100	.000500	....	....	
10,400	52,000	.003900	.000800	....	....	
10,600	53,000	.004250	.000350	....	....	
10,800	54,000	.005100	.000850	....	....	
11,000	55,000	.006550	.001450	.004450	.003600	
11,200	56,000	.006900	.000350	....	....	
11,400	57,000	.007300	.000400	....	....	
11,600	58,000	.008250	.000950	....	....	
11,800	59,000	.009550	.001300	....	....	
12,000	60,000	.010250	.000700	.007900	.003450	
12,400	62,000	.012750	.002500	....	....	
12,800	64,000	.014250	.001500	....	....	
13,200	66,000	.015600	.001350	....	....	
13,600	68,000	.018000	.002400	....	....	
14,000	70,000	.021600	.003600	....	....	
14,400	72,000	.022750	.001150	....	....	
14,800	74,000	.025000	.002250	....	....	
15,200	76,000	.028000	.003000	....	....	
15,600	78,000	.031150	.003150	....	....	
16,000	80,000	.034500	.003350	....	....	
16,400	82,000	.037900	.003400	....	....	
16,800	84,000	.042000	.004100	....	....	
17,200	86,000	.048000	.006000	....	....	
17,600	88,000	.053750	.005750	....	....	
18,000	90,000	.062550	.008800	....	....	
18,400	92,000	.0750	.002450	....	....	
18,950	94,750	.1450	.0700	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	94,750
Elastic limit per square inch of original section	do	48,000
Elongation per inch after rupture	inch	0.2150
Elongation per inch under strain at elastic limit	do	.001700
Reduction in diameter at point of rupture	do	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		″.65 from neck
Character of broken surface		silky; interspersed with granular metal
Elongation of inch sections		″.32* ″.11

No. 537.

Marks, $^{32\ J}_{M\ T_3\ M}$
Length, 4″.50.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000400	.000150	0.	....	
10,000	20,000	.000550	.000150	0.	....	
12,500	25,000	.000750	.000200	0.	....	
15,000	30,000	.000900	.000150	0.	....	
17,500	35,000	.001050	.000150	0.	....	
20,000	40,000	.001200	.000150	0.	....	
22,500	45,000	.001350	.000150	0.	....	
25,000	50,000	.001500	.000150	....	....	Elastic limit.
25,500	51,000	.001600	.000100	....	....	
26,000	52,000	.001900	.000300	....	....	
26,500	53,000	.002350	.000450	....	....	
27,000	54,000	.003100	.000750	....	....	
27,500	55,000	.003600	.000500	.001800	.001800	
28,000	56,000	.004300	.000700	....	....	
28,500	57,000	.004800	.000500	....	....	
29,000	58,000	.005800	.001000	....	....	
29,500	59,000	.006550	.000750	....	....	
30,000	60,000	.007300	.000750	.005350	.003550	
47,600	95,200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	50,000
Compression per inch under stress at elastic limit	inch..	0.001500
Ultimate strength per square inch of original section	pounds..	95,200
Manner of failure		triple flexure

No. 1110.

Marks, ${}^{32\ J_7}_{M\ T,\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000400	.000200	0.	....	
4,000	20,000	.000600	.000200	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001150	.000150	0.	....	
8,000	40,000	.001400	.000250	0.	....	
9,000	45,000	.001550	.000150	....	....	
9,200	46,000	.001650	.000100	....	....	Elastic limit.
9,400	47,000	.002000	.000350	....	....	
9,600	48,000	.002800	.000800	....	....	
9,800	49,000	.003350	.000550	....	....	
10,000	50,000	.003850	.000500	.001950	.001950	
10,200	51,000	.004350	.000500	....	....	
10,400	52,000	.005150	.000800	....	....	
10,600	53,000	.005750	.000600	....	....	
10,800	54,000	.007000	.001250	....	....	
11,000	55,000	.007750	.000750	.005700	.003750	
11,200	56,000	.008550	.000800	....	....	
11,400	57,000	.009100	.000550	....	....	
11,600	58,000	.009600	.000500	....	....	
11,800	59,000	.010700	.001100	....	....	
12,000	60,000	.011850	.001150	.009600	.003900	
12,400	62,000	.013650	.001800	....	....	
12,800	64,000	.015300	.001650	....	....	
13,200	66,000	.017500	.002200	....	....	
13,600	68,000	.019900	.002400	....	....	
14,000	70,000	.022250	.002350	....	....	
14,400	72,000	.024900	.002650	....	....	
14,800	74,000	.027250	.002350	....	....	
15,200	76,000	.029700	.002450	....	....	
15,600	78,000	.033000	.003300	....	....	
16,000	80,000	.036200	.003200	....	....	
16,400	82,000	.041150	.004950	....	....	
16,800	84,000	.046750	.005600	....	....	
17,200	86,000	.053000	.006250	....	....	
17,600	88,000	.0600	.0070	....	....	
18,000	90,000	.0700	.0100	....	....	
18,400	92,000	.0950	.0250	....	....	
18,610	93,050	.1300	.0350	....	....	Tensile strength.

General summary.

Specific gravity		7.8671
Tensile strength per square inch of original section	pounds	93,050
Elastic limit per square inch of original section	do	46,000
Elongation per inch after rupture	inch	0.2150
Elongation per inch under strain at elastic limit	do	.001650
Reduction in diameter at point of rupture	do	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		″.45 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.34*, ″.09

No. 1111.

Marks, ${}^{32\ \mathrm{J}}_{\mathrm{M\ T,\ M}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000700	.000200	0.	....	
5,000	25,000	.000900	.000200	0.	....	
6,000	30,000	.001100	.000200	0.	....	
7,000	35,000	.001250	.000150	.000050	.000050	
8,000	40,000	.001450	.000200	.000100	.000050	
8,200	41,000	.001500	.000050	....	....	
8,400	42,000	.001550	.000050	....	....	
8,600	43,000	.001600	.000050	....	....	
8,800	44,000	.001650	.000050	....	....	
9,000	45,000	.001750	.000100	.000150	.000050	Elastic limit.
9,200	46,000	.002000	.000250	....	....	
9,400	47,000	.002450	.000450	....	....	
9,600	48,000	.003100	.000650	....	....	
9,800	49,000	.003750	.000650	....	....	
10,000	50,000	.004500	.000750	.002700	.002650	
10,200	51,000	.005400	.000900	....	....	
10,400	52,000	.006300	.000900	....	....	
10,600	53,000	.006800	.000500	....	....	
10,800	54,000	.007700	.000900	....	....	
11,000	55,000	.008800	.001100	.006700	.004000	
11,200	56,000	.009250	.000450	....	....	
11,400	57,000	.010500	.001250	....	....	
11,600	58,000	.011950	.001450	....	....	
11,800	59,000	.012500	.000550	....	....	
12,000	60,000	.013800	.001300	.011400	.004700	
12,400	62,000	.015300	.001500	....	....	
12,800	64,000	.017700	.002400	....	....	
13,200	66,000	.020500	.002800	....	....	
13,600	68,000	.022950	.002450	....	....	
14,000	70,000	.025400	.002450	....	....	
14,400	72,000	.028000	.002600	....	....	
14,800	74,000	.036250	.008250	....	....	
15,200	76,000	.037950	.001700	....	....	
15,600	78,000	.039000	.001050	....	....	
16,000	80,000	.043050	.004050	....	....	
16,400	82,000	.050600	.007550	....	....	
16,800	84,000	.0550	.0044	....	....	
17,200	86,000	.0600	.0050	....	....	
17,600	88,000	.0750	.0150	....	....	
18,000	90,000	.1000	.0250	....	....	
18,100	90,500	.1600	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds.. 90,500
Elastic limit per square inch of original section..........do.... 45,000
Elongation per inch after rupture..........inch.. 0.2350
Elongation per inch under strain at elastic limit..........do.... .001750
Reduction in diameter at point of rupture..........do.... .085
Reduction in area after rupture, per centum of original section.......... 30.7
Position of rupture..........⅜ inch from middle of stem
Character of broken surface..........silky
Elongation of inch sections..........″.29*, ″.18

No. 541.

Marks, $\overset{32\ J_7}{M\ T_3\ M}$
Length, 4''.49.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000150	.000150	0.	....	
5, 000	10, 000	.000300	.000150	0.	....	
7, 500	15, 000	.000500	.000200	0.	....	
10, 000	20, 000	.000650	.000150	0.	....	
12, 500	25, 000	.000800	.000150	0.	....	
15, 000	30, 000	.001000	.000200	0.	....	
17, 500	35, 000	.001150	.000150	0.	....	
20, 000	40, 000	.001350	.000200	0.	....	
22, 500	45, 000	.001550	.000200	0.	....	
24, 000	48, 000	.001600	.000050	....	....	Elastic limit.
24, 500	49, 000	.002500	.000900	....	....	
25, 000	50, 000	.003550	.001050	.001900	.001900	
25, 500	51, 000	.004800	.001250	....	....	
26, 000	52, 000	.005800	.001000	....	....	
26, 500	53, 000	.007050	.001250	....	....	
27, 000	54, 000	.008150	.001100	....	....	
27, 500	55, 000	.009350	.001200	....	....	
46, 100	96, 200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	48, 000
Compression per inch under stress at elastic limit	inch..	0. 001600
Ultimate strength per square inch of original section	pounds..	96, 200
Manner of failure		triple flexure

[Additional specimens.]

No. 2221.

Marks, $^{32\,J}_{B\,T_4\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001000	.000150	0.	....	
8,000	40,000	.001200	.000200	0.	....	
9,000	45,000	.001400	.000200	0.	....	
9,200	46,000	.001450	.000050	....	....	
9,400	47,000	.001500	.000050	....	....	Elastic limit.
9,600	48,000	.001800	.000300	....	....	
9,800	49,000	.003850	.002050	....	....	
10,000	50,000	.004200	.000350	....	....	
10,200	51,000	.005000	.000800	....	....	
10,400	52,000	.005700	.000700	....	....	
10,600	53,000	.006450	.000750	....	....	
10,800	54,000	.007350	.000900	....	....	
11,000	55,000	.008200	.000850	....	....	
11,200	56,000	.008900	.000700	....	....	
11,400	57,000	.009750	.000850	....	....	
11,600	58,000	.010350	.000600	....	....	
11,800	59,000	.011000	.000650	....	....	
12,000	60,000	.012000	.001000	....	....	
12,400	62,000	.013900	.001900	....	....	
12,800	64,000	.015750	.001850	....	....	
13,200	66,000	.018050	.002300	....	....	
13,600	68,000	.020250	.002200	....	....	
14,000	70,000	.022550	.002000	....	....	
14,400	72,000	.025150	.002600	....	....	
14,800	74,000	.028000	.002850	....	....	
15,200	76,000	.030600	.002600	....	....	
15,600	78,000	.033150	.002550	....	....	
16,000	80,000	.036700	.003550	....	....	
16,400	82,000	.040600	.003900	....	....	
16,800	84,000	.045800	.005200	....	....	
17,200	86,000	.051250	.005450	....	....	
17,600	88,000	.059150	.007900	....	....	
18,000	90,000	.068000	.008850	....	....	
18,400	92,000	.0900	.0220	....	....	
18,690	93,450	.1150	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	93,450
Elastic limit per square inch of original section............do....	47,000
Elongation per inch after rupture............inch..	0.2150
Elongation per inch under strain at elastic limit ....do....	.001500
Reduction in diameter at point of rupture............do....	.125
Reduction in area after rupture, per centum of original section	43.3
Position of rupture............	″.1 from middle of stem
Character of broken surface............	silky; interspersed with fine granulation
Elongation of inch sections............	″.26*, ″.17

No. 2222.

Marks, $_{B}{}^{32}T_{5}{}^{J}M$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch,	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000350	.000200	0.	....	
3, 000	15, 000	.000500	.000150	0.	....	
4, 000	20, 000	.000650	.000150	0.	....	
5, 000	25, 000	.000900	.000250	0.	....	
6, 000	30, 000	.001100	.000200	0.	....	
7, 000	35, 000	.001250	.000150	0.	....	
8, 000	40, 000	.001400	.000150	0.	....	
9, 000	45, 000	.001550	.000150	0.	....	
9, 200	46, 000	.001600	.000050	....	....	
9, 400	47, 000	.001650	.000050	....	....	
9, 600	48, 000	.001700	.000050	....	....	Elastic limit.
9, 800	49, 000	.002050	.000350	....	....	
10, 000	50, 000	.003050	.001000	....	....	
10, 200	51, 000	.003950	.000900	....	....	
10, 400	52, 000	.004450	.000500	....	....	
10, 600	53, 000	.005100	.000650	....	....	
10, 800	54, 000	.005850	.000750	....	....	
11, 000	55, 000	.006600	.000750	....	....	
11, 200	56, 000	.007450	.000850	....	....	
11, 400	57, 000	.008100	.000650	....	....	
11, 600	58, 000	.009000	.000900	....	....	
11, 800	59, 000	.009750	.000750	....	....	
12, 000	60, 000	.010450	000700	....	....	
12, 400	62, 000	.012100	.001650	....	....	
12, 800	64, 000	.014000	.001900	....	....	
13, 200	66, 000	.015750	.001750	....	....	
13, 600	68, 000	.018000	.002250	....	....	
14, 000	70, 000	.020150	.002150	....	....	
14, 400	72, 000	.022300	.002150	....	....	
14, 800	74, 000	.024650	.002350	....	....	
15, 200	76, 000	.027250	.002600	....	....	
15, 600	78, 000	.029750	.002500	....	....	
16, 000	80, 000	.032700	.002950	....	....	
16, 400	82, 000	.036200	.003500	....	....	
16, 800	84, 000	.040000	.003800	....	....	
17, 200	86, 000	.044350	.004350	....	....	
17, 600	88, 000	.050000	.005750	....	....	
18, 000	90, 000	.057150	.007150	....	....	
18, 400	92, 000	.066500	.009350	....	....	
18, 800	94, 000	.0850	.0185	....	....	
19, 160	95, 800	.1200	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	95, 800
Elastic limit per square inch of original section	do....	48, 000
Elongation per inch after rupture	inch...	0. 1500
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do....	.055
Reduction in area after rupture, per centum of original section		20. 5
Position of rupture		″.65 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.10, ″.20*

No. 2223.

Marks, $^{32\,\text{J}}_{\text{B}\,\text{T}_6\,\text{M}}$
Diameter, ."505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.010150	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.C00750	.000250	0.	....	
5,000	25,000	.001000	.000250	0.	....	
6,000	30,000	.001200	.000200	0.	....	
7,000	35,000	.001450	.000250	0.	....	
8,000	40,000	.001600	.000150	.000050	.000050	
9,000	45,000	.001900	.000300	.000050	0.	
9,200	46,000	.002000	.000100	....	....	Elastic limit.
9,400	47,000	.002450	.000450	....	....	
9,600	48,000	.003700	.001250	....	....	
9,800	49,000	.004350	.000650	....	....	
10,000	50,000	.005150	.000800	....	....	
10,200	51,000	.005700	.000550	....	....	
10,400	52,000	.006450	.000750	....	....	
10,600	53,000	.007200	.000750	....	....	
10,800	54,000	.008000	.000800	....	....	
11,000	55,000	.008750	.000750	....	....	
11,200	56,000	.009600	.000850	....	....	
11,400	57,000	.010300	.000700	....	....	
11,600	58,000	.011300	.000100	....	....	
11,800	59,000	.012100	.000800	....	....	
12,000	60,000	.013000	.000900	....	....	
12,400	62,000	.015000	.002000	....	....	
12,800	64,000	.016750	.001750	....	....	
13,200	66,000	.018750	.002000	....	....	
13,600	68,000	.021000	.002250	....	....	
14,000	70,000	.023600	.002600	....	....	
14,400	72,000	.026100	.002500	....	....	
14,800	74,000	.028750	.002650	....	....	
15,200	76,000	.031550	.002800	....	....	
15,600	78,000	.034850	.003300	....	....	
16,000	80,000	.038250	.003400	....	....	
16,400	82,000	.042400	.004150	....	....	
16,800	84,000	.047000	.004600	....	....	
17,200	86,000	.053000	.006000	....	....	
17,600	88,000	.0600	.0070	....	....	
18,000	90,000	.0700	.0100	....	....	
18,400	92,000	.0900	.0200	....	....	
18,770	93,850	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	93,800
Elastic limit per square inch of original section	do....	46,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do....	.002000
Reduction in diameter at point of rupture	do....	.055
Reduction in area after rupture, per centum of original section		20.5
Position of rupture		".05 from middle of stem
Character of broken surface		granular ; dull spot at circumference
Diameter ½ inch from point of rupture		".43
Elongation of inch sections		".15, ".25*

[Additional specimens.]

No. 2416.

Marks, $\substack{32\ J_7\\ B\ T_4\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	**Initial load.**
1,000	5,000	.000150	.000150	0.	....	
2.000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000550	.000200	0	....	
4,000	20,000	.000750	.000200	0.	....	
5,000	25,000	.001000	.000250	0.	....	
6,000	30,000	.001150	.000150	0.	....	
7,000	35,000	.001250	.000100	....	....	
8,000	40,000	.001450	.000200	....	....	
8,200	41,000	.001500	.000050	....	....	
8,400	42,000	.001550	.000050	....	....	
8,600	43,000	.001550	0.	....	....	
8,800	44,000	.001600	.000050	....	....	
9,000	45,000	.001650	.000050	....	....	
9,200	46,000	.001650	0.	....	....	
9,400	47,000	.001700	.000050	....	....	
9,600	48,000	.001750	.000050	....	....	
9,800	49,000	.001800	.000050	....	....	Elastic limit.
10,000	50,000	.002100	.000300	....	....	
10,200	51,000	.003000	.000900	....	....	
10,400	52,000	.003450	.000450	....	....	
10,600	53,000	.004000	.000550	....	....	
10,800	54,000	.004750	.000750	....	....	
11,000	55,000	.005200	.000450	....	....	
11,200	56,000	.005700	.000500	....	....	
11,400	57,000	.006450	.000750	....	....	
11,600	58,000	.007050	.000600	....	....	
11,800	59,000	.007700	.000650	....	....	
12,000	60,000	.008500	.000800	....	....	
12,400	62,000	.010000	.001500	....	....	
12,800	64,000	.011600	.001600	....	....	
13,200	66,000	.013350	.001750	....	....	
13,600	68,000	.015200	.001850	....	....	
14,000	70,000	.017100	.001900	....	....	
14,400	72,000	.018650	.001550	....	....	
14,800	74,000	.020600	.001950	....	....	
15,200	76,000	.022850	.002250	....	....	
15,600	78,000	.024850	.002000	....	....	
16,000	80,000	.027600	.002750	....	....	
16,400	82,000	.030200	.002600	....	....	
16,800	84,000	.033100	.002900	....	....	
17,200	86,000	.036350	.003250	....	....	
17,600	88,000	.040000	.003650	....	....	
18,000	90,000	.044500	.004500	....	....	
18,400	92,000	.0500	.0055	....	....	
18,800	94,000	.0550	.0050	....	....	
19,200	96,000	.0600	.0050	....	....	
19,600	98,000	.0700	.0100	....	....	
20,000	100,000	.1000	.0300	....	....	
20,200	101,000	.1200	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	101,000
Elastic limit per square inch of original section	do...	49,000
Elongation per inch after rupture	inch..	0.1900
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		″.35 from neck
Character of broken surface		granular, 60 per centum; silky, 40 per centum
Elongation of inch sections		″.26*, ″.12

No. 2417.

Marks, $\overset{32\ J,}{B\ T,\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	**Initial load.**
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000900	.000250	0.	....	
6,000	30,000	.001050	.000150	0.	....	
7,000	35,000	.001200	.000150	....	....	
8,000	40,000	.001300	.000100	....	....	
9,000	45,000	.001450	.000150	....	....	
9,200	46,000	.001500	.000050	....	....	
9,400	47,000	.001550	.000050	....	....	
9,600	48,000	.001600	.000050	....	....	
9,800	49,000	.001650	.000050	....	....	
10,000	50,000	.001700	.000050	....	....	
10,200	51,000	.001750	.000050	....	....	
10,400	52,000	.001800	.000050	....	....	**Elastic limit.**
10,600	53,000	.002100	.000300	....	....	
10,800	54,000	.002500	.000400	....	....	
11,000	55,000	.002750	.000250	....	....	
11,200	56,000	.003100	.000350	....	....	
11,400	57,000	.003550	.000450	....	....	
11,600	58,000	.004000	.000450	....	....	
11,800	59,000	.004600	.000600	....	....	
12,000	60,000	.005350	.000750	....	....	
12,400	62,000	.006750	.001400	....	....	
12,800	64,000	.008000	.001250	....	....	
13,200	66,000	.009500	.001500	....	....	
13,600	68,000	.011250	.001750	....	....	
14,000	70,000	.012750	.001500	....	....	
14,400	72,000	.014500	.001750	....	....	
14,800	74,000	.015950	.001450	....	....	
15,200	76,000	.017950	.002000	....	....	
15,600	78,000	.019750	.001800	....	....	
16,000	80,000	.021600	.001850	....	....	
16,400	82,000	.024250	.002650	....	....	
16,800	84,000	.026350	.002100	....	....	
17,200	86,000	.028750	.002400	....	....	
17,600	88,000	.031450	.002700	....	....	
18,000	90,000	.034500	.003050	....	....	
18,400	92,000	.037700	.003200	....	....	
18,800	94,000	.041000	.003300	....	....	
19,200	96,000	.0450	.0040	....	....	
19,600	98,000	.0500	.0050	....	....	
20,000	100,000	.0550	.0050	....	....	
20,400	102,000	.0650	.0100	....	....	
20,800	104,000	.0850	.0200	....	....	
21,040	105,200	.1100	.0250	....	....	**Tensile strength.**

General summary.

Tensile strength per square inch of original section	pounds..	105,200
Elastic limit per square inch of original section	do...	52,000
Elongation per inch after rupture	inch..	0.1550
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.085
Reduction in area after rupture, per centum of original section		30.7
Position of rupture		″.33 from neck
Character of broken surface		granular; dull center
Elongation of inch sections		″.22*, ″.09

No. 651.

Marks, $\overset{32\ J.}{\text{B T. M}}$
Length, 4″.508.
Diameter, ″.798.
Sectional area, 50.square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000233	.000133	0.	....	
7,500	15,000	.000367	.000134	0.	....	
10,000	20,000	.000567	.000200	0.	....	
12,500	25,000	.000733	.000166	0.	....	
15,000	30,000	.000933	.000200	.000067	.000067	
17,500	35,000	.001167	.000234	.000100	.000033	
20,000	40,000	.001400	.000233	.000167	.000067	
20,500	41,000	.001433	.000033	....	....	
21,000	42,000	.001467	.000034	....	....	
21,500	43,000	.001533	.000066	....	....	
22,000	44,000	.001600	.000067	....	....	
22,500	45,000	.001667	.000067	....	....	Elastic limit.
23,000	46,000	.001767	.000100	....	....	
23,500	47,000	.001933	.000166	....	....	
24,000	48,000	.002100	.000167	....	....	
24,500	49,000	.002267	.000167	....	....	
25,000	50,000	.002567	.000300	....	....	Rested under load 1 hour.
25,500	51,000	.003133	.000566	....	....	
26,000	52,000	.003733	.000600	....	....	
26,500	53,000	.004733	.001000	....	....	
27,000	54,000	.005500	.000767	....	....	
46,400	92,800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section.........pounds..	45,000
Compression per inch under stress at elastic limit.........inch..	0.001667
Ultimate strength per square inch of original section.........pounds..	92,800
Manner of failure.........	triple flexure

No. 1112.

Marks, $\overset{32\ J_8}{B\ T_1\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001050	.000200	0.	....	
8,000	40,000	.001250	.000200	0.	....	
9,000	45,000	.001450	.000200	0.	....	
9,200	46,000	.001550	.000100	....	....	Elastic limit.
9,400	47,000	.001900	.000350	....	....	
9,600	48,000	.004050	.002150	....	....	
9,800	49,000	.005100	.001050	....	....	
10,000	50,000	.005950	.000850	.004100	.004100	
10,200	51,000	.006350	.000400	....	....	
10,400	52,000	.006950	.000600	....	....	
10,600	53,000	.007800	.000850	....	....	
10,800	54,000	.008800	.001000	....	....	
11,000	55,000	.009750	.000950	....	....	
11,200	56,000	.010650	.000900	....	....	
11,400	57,000	.011750	.001100	....	....	
11,600	58,000	.012600	.000850	....	....	
11,800	59,000	.013300	.000700	....	....	
12,000	60,000	.014500	.001200	....	....	
12,400	62,000	.016250	.001750	....	....	
12,800	64,000	.018250	.002000	....	....	
13,200	66,000	.021250	.003000	....	....	
13,600	68,000	.023250	.002000	....	....	
14,000	70,000	.025700	.002450	....	....	
14,400	72,000	.028600	.002900	....	....	
14,800	74,000	.031700	.003100	....	....	
15,200	76,000	.035500	.003800	....	....	
15,600	78,000	.039000	.003500	....	....	
16,000	80,000	.044750	.005750	....	....	
16,400	82,000	.050000	.005250	....	....	
16,800	84,000	.056250	.006250	....	....	
17,200	86,000	.0650	.008750	....	....	
17,600	88,000	.0750	.0100	....	....	
18,000	90,000	.0950	.0200	....	....	
18,280	91,400	.1550	.0600	....	....	Tensile strength.

General summary.

Specific gravity		7.8694
Tensile strength per square inch of original section	pounds..	91,400
Elastic limit per square inch of original section	do...	46,000
Elongation per inch after rupture	inch..	0.2450
Elongation per inch under strain at elastic limit	do...	.001550
Reduction in diameter at point of rupture	do...	.105
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		″.1 from middle of stem
Character of broken surface		silky, 60 per centum; granular, 40 per centum
Elongation of inch sections		″.26, ″.23

No. 1113.

Marks, $_{\text{B}}\overset{32}{\text{T}_2}\overset{\text{J}_8}{\text{M}}$
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000050	.000050	0.	....	
2,000	10,000	.000100	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000450	.000150	0.	....	
5,000	25,000	.000650	.000150	0.	....	
6,000	30,000	.000750	.000150	0.	....	
7,000	35,000	.000900	.000200	0.	....	
8,000	40,000	.001150	.000150	0.	....	
9,000	45,000	.001350	.000250	.000050	.000050	Elastic limit.
9,200	46,000	.001550	.000150	....	....	
9,400	47,000	.001850	.000350	....	....	
9,600	48,000	.002500	.000700	....	....	
9,800	49,000	.003050	.000500	....	....	
10,000	50,000	.003600	.000550	.001950	.001900	
10,200	51,000	.004500	.000900	....	....	
10,400	52,000	.005250	.000750	....	....	
10,600	53,000	.006000	.000750	....	....	
10,800	54,000	.006500	.000500	....	....	
11,000	55,000	.007250	.000750	....	....	
11,200	56,000	.008100	.000850	....	....	
11,400	57,000	.009050	.000950	....	....	
11,600	58,000	.009900	.000850	....	....	
11,800	59,000	.010600	.000700	....	....	
12,000	60,000	.011700	.001100	....	....	
12,400	62,000	.013350	.001650	....	....	
12,800	64,000	.015100	.001750	....	....	
13,200	66,000	.017100	.002000	....	....	
13,600	68,000	.019650	.002550	....	....	
14,000	70,000	.022050	.002400	....	....	
14,400	72,000	.024750	.002700	....	....	
14,800	74,000	.027500	.002750	....	....	
15,200	76,000	.030250	.002750	....	....	
15,600	78,000	.032700	.002450	....	....	
16,000	80,000	.036000	.003300	....	....	
16,400	82,000	.041050	.005050	....	....	
16,800	84,000	.045250	.004200	....	....	
17,200	86,000	.050300	.005050	....	....	
17,600	88,000	.057250	.006950	....	....	
18,000	90,000	.0650	.007750	....	....	
18,400	92,000	.0750	.0100	....	....	
18,800	94,000	.1150	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	94,000
Elastic limit per square inch of original section	do...	45,000
Elongation per inch after rupture	inch..	0.1750
Elongation per inch under strain at elastic limit	do...	.001350
Reduction in diameter at point of rupture	do...	.075
Reduction in area after rupture, per centum of original section		27.4
Position of rupture		''.55 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		''.24*, ''.11

No. 554.

Marks, $\mathrm{B}\,{}^{32}\mathrm{T}_3{}^{\mathrm{J}_8}\mathrm{M}$
Length, 4″.5.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	—.000050	—.000050	
5,000	10,000	.000200	.000100	—.000050	0.	
7,500	15,000	.000300	.000100	—.000050	0	
10,000	20,000	.000450	.000150	—.000100	—.000050	
12,500	25,000	.000600	.000150	—.000100	0.	
15,000	30,000	.000800	.000200	—.000100	0.	
17,500	35,000	.001000	.000200	—.000100	0.	
20,000	40,000	.001150	.000150	—.000100	0.	
20,500	41,000	.001200	.000050	....	....	
21,000	42,000	.001300	.000100	....	....	Elastic limit.
21,500	43,000	.001500	.000200	....	....	
22,000	44,000	.002700	.001200	....	....	
22,500	45,000	.003050	.000350	.001500	.001600	
23,000	46,000	.003800	.000750	....	....	
23,500	47,000	.004750	.000950	....	....	
24,000	48,000	.005450	.000700	....	....	
24,500	49,000	.006450	.001000	....	....	
25,000	50,000	.007200	.000750	.005350	.003850	
25,500	51,000	.007750	.000550	....	....	
26,000	52,000	.008950	.001200	....	....	
26,500	53,000	.009550	.000600	....	....	
27,000	54,000	.010500	.000950	....	....	
27,500	55,000	.011500	.001000	.009400	.004050	
28,000	56,000	.012050	.000550	....	....	
28,500	57,000	.013000	.000950	....	....	
29,000	58,000	.013800	.000800	....	....	
29,500	59,000	.015000	.001200	....	....	
30,000	60,000	.016050	.001050	.013750	.004350	
44,500	89,000	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	42,000
Compression per inch under stress at elastic limit	inch..	0.001300
Ultimate strength per square inch of original section	pounds..	89,000
Manner of failure		triple flexure

[Additional specimens.]

No. 2215.

Marks, ${}_{M}{}^{32}{}_{T_4}{}^{J_4}{}_{M}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.		
2,000	10,000	.000350	.000200	0.		
3,000	15,000	.000500	.000150	0.		
4,000	20,000	.000650	.000150	0.		
5,000	25,000	.000800	.000150	0.		
6,000	30,000	.000950	.000150	0.		
7,000	35,000	.001200	.000250	0.		
8,000	40,000	.001400	.000200	0.		
9,000	45,000	.001550	.000150			
9,200	46,000	.001600	.000050			
9,400	47,000	.001650	.000050			
9,600	48,000	.001750	.000100			Elastic limit.
9,800	49,000	.003050	.001300			
10,000	50,000	.003900	.000850			
10,200	51,000	.004450	.000550			
10,400	52,000	.005150	.000700			
10,600	53,000	.005850	.000700			
10,800	54,000	.006650	.000800			
11,000	55,000	.007300	.000650			
11,200	56,000	.008100	.000800			
11,400	57,000	.008850	.000750			
11,600	58,000	.009550	.000700			
11,800	59,000	.010250	.000700			
12,000	60,000	.011000	.000750			
12,400	62,000	.012700	.001700			
12,800	64,000	.014350	.001650			
13,200	66,000	.016300	.001950			
13,600	68,000	.018500	.002200			
14,000	70,000	.020600	.002100			
14,400	72,000	.023000	.002400			
14,800	74,000	.025350	.002350			
15,200	76,000	.027700	.002350			
15,600	78,000	.030200	.002500			
16,000	80,000	.033100	.002900			
16,400	82,000	.036750	.003650			
16,800	84,000	.040150	.003400			
17,200	86,000	.045000	.004850			
17,600	88,000	.049850	.004850			
18,000	90,000	.057000	.007150			
18,400	92,000	.066000	.009000			
18,800	94,000	.0850	.0190			
19,200	96,000	.1150	.0300			
19,220	96,100	.1400	.0250			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96,100
Elastic limit per square inch of original section	do...	48,000
Elongation per inch after rupture	inch..	0.2150
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		".85 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		".16, ".27[A]

No. 2216.

Marks, $\overset{32\ J,}{M\ T,\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000500	.000150	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000850	.000200	0.	....	
6,000	30,000	.001000	.000150	0.	....	
7,000	35,000	.001200	.000200	0.	....	
8,000	40,000	.001350	.000150	0.	....	
8,600	43,000	.001450	.000100	....	....	
8,800	44,000	.001500	.000050	....	....	Elastic limit
9,000	45,000	.002850	.001350	....	....	
9,200	46,000	.003550	.000700	....	....	
9,400	47,000	.004250	.000700	....	....	
9,600	48,000	.005000	.000750	....	....	
9,800	49,000	.006000	.001000	....	....	
10,000	50,000	.006750	.000750	....	....	
10,200	51,000	.007500	.000750	....	....	
10,400	52,000	.008100	.000600	....	....	
10,600	53,000	.008900	.000700	....	....	
10,800	54,000	.009750	.000850	....	....	
11,000	55,000	.010500	.000750	....	....	
11,200	56,000	.011550	.001050	....	....	
11,400	57,000	.012200	.000650	....	....	
11,600	58,000	.013200	.001000	....	....	
11,800	59,000	.014200	.001000	....	....	
12,000	60,000	.015000	.000800	....	....	
12,400	62,000	.017350	.002350	....	....	
12,800	64,000	.019600	.002150	....	....	
13,200	66,000	.021700	.002200	....	....	
13,600	68,000	.024200	.002500	....	....	
14,000	70,000	.026750	.002550	....	....	
14,400	72,000	.029550	.002800	....	....	
14,800	74,000	.032250	.002700	....	....	
15,200	76,000	.035750	.003500	....	....	
15,600	78,000	.039750	.004000	....	....	
16,000	80,000	.044050	.004300	....	....	
16,400	82,000	.050000	.005950	....	....	
16,800	84,000	.056500	.006500	....	....	
17,200	86,000	.0650	.0085	....	....	
17,600	88,000	.0800	.0150	....	....	
18,000	90,000	.1000	.0200	....	....	
18,070	90,350	.1200	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	90,850
Elastic limit per square inch of original section	do	44,000
Elongation per inch after rupture	inch	0.1350
Elongation per inch under strain at elastic limit	do	.001500
Reduction in diameter at point of rupture	do	.045
Reduction in area after rupture, per centum of original section		16.9
Position of rupture		″.53 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.15*, ″.12

No. 2217.

Marks, 33 J, M T, M
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000500	.000150	0.	....	
4,000	20,000	.000700	.000200	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.001000	.000150	0.	....	
7,000	35,000	.001150	.000150	0.	....	
8,000	40,000	.001350	.000200	0.	....	
9,000	45,000	.001550	.000200	0.	....	
9,200	46,000	.001550	0.	....	....	
9,400	47,000	.001650	.000100	....	....	Elastic limit.
9,600	48,000	.002100	.000450	....	....	
9,800	49,000	.003000	.000900	....	....	
10,000	50,000	.004000	.001000	....	....	
10,200	51,000	.005000	.001000	....	....	
10,400	52,000	.005900	.000900	....	....	
10,600	53,000	.006500	.000600	....	....	
10,800	54,000	.007200	.000700	....	....	
11,000	55,000	.008150	.000950	....	....	
11,200	56,000	.008900	.000750	....	....	
11,400	57,000	.009650	.000750	....	....	
11,600	58,000	.010400	.000750	....	....	
11,800	59,000	.011250	.000850	....	....	
12,000	60,000	.012050	.000800	....	....	
12,400	62,000	.013800	.001750	....	....	
12,800	64,000	.015750	.001950	....	....	
13,200	66,000	.017700	.001950	....	....	
13,600	68,000	.020000	.002300	....	....	
14,000	70,000	.022400	.002400	....	....	
14,400	72,000	.024600	.002200	....	....	
14,800	74,000	.027250	.002650	....	....	
15,200	76,000	.029650	.002400	....	....	
15,600	78,000	.033000	.003350	....	....	
16,000	80,000	.036050	.003050	....	....	
16,400	82,000	.039750	.003700	....	....	
16,800	84,000	.044000	.004250	....	....	
17,200	86,000	.046800	.002800	....	....	
17,600	88,000	.056050	.009250	....	....	
18,000	90,000	.0650	.008950	....	....	
18,400	92,000	.0800	.0150	....	....	
18,660	93,300	.1150	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	93,300
Elastic limit per square inch of original section	do...	47,000
Elongation per inch after rupture	inch..	0.1800
Elongation per inch under strain at elastic limit	do...	.001650
Reduction in diameter at point of rupture	do...	.075
Reduction in area after rupture, per centum of original section		27.4
Position of rupture		½ inch from neck
Character of broken surface		granular; dull spot at circumference
Minimum diameter ½ inch from point of rupture		″.42
Elongation of inch sections		″.27*, ″.09

NEW JACKET, No. 8.

No. 2547.

Marks, $^{32\ J,}_{M\ T,\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000800	.000100	0.	....	
7,000	35,000	.000950	.000150	....	....	
8,000	40,000	.001100	.000150	....	....	
9,000	45,000	.001250	.000150	....	....	
9,200	46,000	.001300	.000050	....	....	
9,400	47,000	.001350	.000050	....	....	
9,600	48,000	.001400	.000050	....	....	
9,800	49,000	.001450	.000050	....	....	
10,000	50,000	.001500	.000050	....	....	
10,200	51,000	.001500	0.	....	....	
10,400	52,000	.001550	.000050	....	....	Elastic limit.
10,600	53,000	.001750	.000200	....	....	
10,800	54,000	.002250	.000500	....	....	
11,000	55,000	.002800	.000550	....	....	
11,200	56,000	.003400	.000600	....	....	
11,400	57,000	.003950	.000550	....	....	
11,600	58,000	.004800	.000850	....	....	
11,800	59,000	.005400	.000600	....	....	
12,000	60,000	.006100	.000700	....	....	
12,400	62,000	.007450	.001350	....	....	
12,800	64,000	.008850	.001400	....	....	
13,200	66,000	.010050	.001200	....	....	
13,600	68,000	.011900	.001850	....	....	
14,000	70,000	.013100	.001200	....	....	
14,400	72,000	.014950	.001850	....	....	
14,800	74,006	.016800	.001850	....	....	
15,200	76,000	.018750	.001950	....	....	
15,600	78,000	.020250	.001500	....	....	
16,000	80,000	.022000	.001750	....	....	
16,400	82,000	.024000	.002000	....	....	
16,800	84,000	.026150	.002150	....	....	
17,200	86,000	.028750	.002600	....	....	
17,600	88,000	.031100	.002350	....	....	
18,000	90,000	.034050	.002950	....	....	
18,400	92,000	.037550	.003500	....	....	
18,800	94,000	.041150	.003600	....	....	
19,200	96,000	.045900	.004750	....	....	
19,600	98,000	.050100	.004200	....	....	
20,000	100,000	.0600	.0099	....	....	
20,400	102,000	.0650	.0050	....	....	
20,800	104,000	.0800	.0150	....	....	
21,120	105,600	.1150	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	105,600
Elastic limit per square inch of original section	do...	52,000
Elongation per inch after rupture	inch..	0.1850
Elongation per inch under strain at elastic limit	do...	.001550
Reduction in diameter at point of rupture	do...	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		1″.1 from neck
Character of broken surface		granular; dull center
Elongation of inch sections		″.21*, ″.16

No. 2548.

Marks, $^{32\ \text{J}_8}_{\text{MT}_8\ \text{M}}$
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.		
2,000	10,000	.000250	.000100	0.		
3,000	15,000	.000400	.000150	0.		
4,000	20,000	.000500	.000100	0.		
5,000	25,000	.000650	.000150	0.		
6,000	30,000	.000850	.000200	0.		
7,000	35,000	.000950	.000100			
8,000	40,000	.001150	.000200			
9,000	45,000	.001350	.000200			
9,200	46,000	.001400	.000050			
9,400	47,000	.001500	.000100			
9,600	48,000	.001500	0.			
9,800	49,000	.001550	.000050			
10,000	50,000	.001600	.000050			
10,200	51,000	.001650	.000050			
10,400	52,000	.001700	.000050			
10,600	53,000	.001800	.000100			Elastic limit.
10,800	54,000	.002100	.000300			
11,000	55,000	.002350	.000250			
11,200	56,000	.002800	.000450			
11,400	57,000	.003300	.000500			
11,600	58,000	.003800	.000500			
11,800	59,000	.004750	.000950			
12,000	60,000	.005500	.000750			
12,400	62,000	.006500	.001000			
12,800	64,000	.007950	.001450			
13,200	66,000	.009100	.001150			
13,600	68,000	.010600	.001500			
14,000	70,000	.012000	.001400			
14,400	72,000	.013500	.001500			
14,800	74,000	.015000	.001500			
15,200	76,000	.016550	.001550			
15,600	78,000	.018500	.001950			
16,000	80,000	.020000	.001500			
16,400	82,000	.021800	.001800			
16,800	84,000	.023750	.001950			
17,200	86,000	.026000	.002250			
17,600	88,000	.028200	.002200			
18,000	90,000	.030300	.002100			
18,400	92,000	.033500	.003200			
18,800	94,000	.036250	.002750			
19,200	96,000	.039500	.003250			
19,600	98,000	.043500	.004000			
20,000	100,000	.048100	.004600			
20,400	102,000	.053750	.005650			
20,800	104,000	.0600	.006250			
21,200	106,000	.0700	.0100			
21,600	108,000	.0950	.0250			
21,610	108,050					Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	108,050
Elastic limit per square inch of original section	do	53,000
Elongation per inch after rupture	inch	0.1000
Elongation per inch under strain at elastic limit	do	.001800
Reduction in diameter at point of rupture	do	.035
Reduction in area after rupture, per centum of original section		13.2
Position of rupture		''.71 from neck
Character of broken surface		granular; radiating from a point in the circumference
Elongation of inch sections		''.09, ''.11*

No. 660.

Marks, $^{32\,J_8}_{M\,T_9\,M}$
Length, 4.″504.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000300	.000200	0.	....	
7,500	15,000	.000467	.000167	0.	....	
10,000	20,000	.000700	.000233	0.	....	
12,500	25,000	.000900	.000200	0.	....	
15,000	30,000	.001067	.000167	.000033	.000033	
17,500	35,000	.001267	.000200	.000067	.000034	
20,000	40,000	.001433	.000166	....	....	
20,500	41,000	.001467	.000034	....	....	
21,000	42,000	.001533	.000066	....	....	
21,500	43,000	.001567	.000034	....	....	
22,000	44,000	.001633	.000066	....	....	
22,500	45,000	.001667	.000034	....	....	
23,000	46,000	.001700	.000033	....	....	
23,500	47,000	.001733	.000033	....	....	
24,000	48,000	.001800	.000067	....	....	
24,500	49,000	.001833	.000033	....	....	
25,000	50,000	.001867	.000034	....	....	
25,500	51,000	.001933	.000066	....	....	
26,000	52,000	.002000	.000067	....	....	
26,500	53,000	.002067	.000067	....	....	Elastic limit.
27,000	54,000	.002267	.000200	....	....	
27,500	55,000	.002700	.000433	....	....	
28,000	56,000	.003400	.000700	....	....	
28,500	57,000	.004167	.000767	....	....	
29,000	58,000	.005033	.000866	....	....	
52,320	104,640	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds.. 53,000
Compression per inch under stress at elastic limit....................................inch.. 0.002067
Ultimate strength per square inch of original section....................................pounds.. 104,640
Manner of failure ....triple flexure

[Additional specimens.]

No. 2720.

Marks, $\overset{32\ J_8}{M\ T_{10}\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000900	.000250	0.	....	
6,000	30,000	.001100	.000200	0.	....	
7,000	35,000	.001300	.000200	0.	....	
8,000	40,000	.001500	.000200	.000050	.000050	
9,000	45,000	.001700	.000200	....	....	
9,200	46,000	.001700	0.	....	....	
9;400	47,000	.001750	.000050	....	....	
9,600	48,000	.001800	.000050	....	....	
9,800	49,000	.001850	.000050	....	....	
10,000	50,000	.001950	.000100	....	....	
10,200	51,000	.002050	.000100	....	....	
10,400	52,000	.002100	.000050	....	....	
10,600	53,000	.002200	.000100	....	....	Elastic limit.
10,800	54,000	.002500	.000300	....	....	
11,000	55,000	.002850	.000350	....	....	
11,200	56,000	.003250	.000400	....	....	
11,400	57,000	.003900	.000650	....	....	
11,600	58,000	.004500	.000600	....	....	
11,800	59,000	.005200	.000700	....	....	
12,000	60,000	.005700	.000500	....	....	
12,400	62,000	.007500	.001800	....	....	
12,800	64,000	.008500	.001000	....	....	
13,200	66,000	.009650	.001150	....	....	
13,600	68,000	.011150	.001500	....	....	
14,000	70,000	.012750	.001600	....	....	
14,400	72,000	.014250	.001500	....	....	
14,800	74,000	.015600	.001350	....	....	
15,200	76,000	.017500	.001900	....	....	
15,600	78,000	.019000	.001500	....	....	
16,000	80,000	.020600	.001600	....	....	
16,400	82,000	.022500	.001900	....	....	
16,800	84,000	.024500	.002000	....	....	
17,200	86,000	.026750	.002250	....	....	
17,600	88,000	.029250	.002500	....	....	
18,000	90,000	.031750	.002500	....	....	
18,400	92,000	.034150	.002400	....	....	
18,800	94,000	.037300	.003150	....	....	
19,200	96,000	.040600	.003300	....	....	
19,600	98,000	.0450	.004400	....	....	
20,000	100,000	.0500	.0050	....	....	
20,400	102,000	.0525	.0025	....	....	
20,800	104,000	.0600	.0075	....	....	
21,200	106,000	.0750	.0150	....	....	
21,600	108,000	.1050	.0300	....	....	
21,620	108,100	.1200	.0150	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	108,100
Elastic limit per square inch of original section	do...	53,000
Elongation per inch after rupture	inch..	0.1850
Elongation per inch under strain at elastic limit	do...	.002200
Reduction in diameter at point of rupture	do...	.085
Reduction in area after rupture, per centum of original section		30.7
Position of rupture		″.90 from the neck
Character of broken surface		granular; silky center
Elongation of inch sections		″.12, ″.25*

No. 2721.

Marks, $\mathrm{M}\overset{32\ J_s}{T_{11}}\mathrm{M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000550	.000100	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001050	.000150	0.	....	
8,000	40,000	.001250	.000200	0.	....	
9,000	45,000	.001450	.000200	....	....	
10,000	50,000	.001700	.000250	....	....	
10,200	51,000	.001800	.000100	....	....	
10,400	52,000	.001900	.000100	....	....	Elastic limit.
10,600	53,000	.002200	.000300	....	....	
10,800	54,000	.002900	.000700	....	....	
11,000	55,000	.003650	.000750	....	....	
11,200	56,000	.004150	.000500	....	....	
11,400	57,000	.004650	.000500	....	....	
11,600	58,000	.005300	.000650	....	....	
11,800	59,000	.006000	.000700	....	....	
12,000	60,000	.006550	.000550	....	....	
12,400	62,000	.008500	.001950	....	....	
12,800	64,000	.010000	.001500	....	....	
13,200	66,000	.011000	.001000	....	....	
13,600	68,000	.012400	.001400	....	....	
14,000	70,000	.014050	.001650	....	....	
14,400	72,000	.015600	.001550	....	....	
14,800	74,000	.017100	.001500	....	....	
15,200	76,000	.018750	.001650	....	....	
15,600	78,000	.020050	.001900	....	....	
16,000	80,000	.022750	.002100	....	....	
16,400	82,000	.024800	.002050	....	....	
16,800	84,000	.027000	.002200	....	....	
17,200	86,000	.029750	.002750	....	....	
17,600	88,000	.032250	.002500	....	....	
18,000	90,000	.035600	.003350	....	....	
18,400	92,000	.038650	.003050	....	....	
18,800	94,000	.042600	.003950	....	....	
19,200	96,000	.047000	.004400	....	....	
19,600	98,000	.0525	.0055	....	....	
20,000	100,000	.0600	.0075	....	....	
20,400	102,000	.0700	.0100	....	....	
20,800	104,000	.0850	.0150	....	....	
21,020	105,100	.1200	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	105,100
Elastic limit per square inch of original section..........do...	52,000
Elongation per inch after rupture..........inch..	0.1700
Elongation per inch under strain at elastic limit..........do...	.001900
Reduction in diameter at point of rupture..........do...	.095
Reduction in area after rupture, per centum of original section..........	34.0
Position of rupture..........	″.80 from neck
Character of broken surface..........	granular; silky spot near center
Elongation of inch sections..........	″.23*, ″.11

No. 2722.

Marks, $\mathrm{M}\overset{32\ \mathrm{J_8}}{\mathrm{T_{12}}}\mathrm{M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001150	.000150	0.	....	
8,000	40,000	.001350	.000200	0.	....	
9,000	45,000	.001550	.000200	....	....	
10,000	50,000	.001750	.000200	....	....	
10,200	51,000	.001850	.000100	....	....	
10,400	52,000	.002000	.000150	....	....	
10,600	53,000	.002100	.000100	....	....	Elastic limit.
10,800	54,000	.002550	.000450	....	....	
11,000	55,000	.003000	.000450	....	....	
11,200	56,000	.003700	.000700	....	....	
11,400	57,000	.004300	.000600	....	....	
11,600	58,000	.004850	.000550	....	....	
11,800	59,000	.005550	.000700	....	....	
12,000	60,000	.006500	.000950	....	....	
12,400	62,000	.007700	.001200	....	....	
12,800	64,000	.009000	.001300	....	....	
13,200	66,000	.010600	.001600	....	....	
13,600	68,000	.012250	.001650	....	....	
14,000	70,000	.013500	.001250	....	....	
14,400	72,000	.015150	.001650	....	....	
14,800	74,000	.016750	.001600	....	....	
15,200	76,000	.018500	.001750	....	....	
15,600	78,000	.020250	.001750	....	....	
16,000	80,000	.022050	.001800	....	....	
16,400	82,000	.024000	.001950	....	....	
16,800	84,000	.026500	.002500	....	....	
17,200	86,000	.029000	.002500	....	....	
17,600	88,000	.031500	.002500	....	....	
18,000	90,000	.034500	.003000	....	....	
18,400	92,000	.037850	.003350	....	....	
18,800	94,000	.041150	.003300	....	....	
19,200	96,000	.045250	.004100	....	....	
19,600	98,000	.0500	.004750	....	....	
20,000	100,000	.0575	.0075	....	....	
20,400	102,000	.0650	.0075	....	....	
21,000	104,000	.0850	.0200	....	....	
21,180	105,900	.1200	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section .... pounds..	105,900
Elastic limit per square inch of original section .... do...	53,000
Elongation per inch after rupture .... inch..	0.1900
Elongation per inch under strain at elastic limit .... do...	.002100
Reduction in diameter at point of rupture .... do...	.095
Reduction in area after rupture, per centum of original section	34.0
Position of rupture	1 inch from neck
Character of broken surface	granular; dull silky center
Elongation of inch sections	″.23*, ″.15

No. 1114.

Marks, $^{32\ J_{8}}_{B\ T_{1}\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000130	.000150	0.	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000600	.000200	0.	....	
5,000	25,000	.000700	.000100	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001000	.000180	0.	....	
8,000	40,000	.001200	.000200	0.	....	
9,000	45,000	.001400	.000200	0.	....	
10,000	50,000	.001700	.000300	.000200	.000200	Elastic limit.
10,200	51,000	.002300	.000600	....	....	
10,400	52,000	.002750	.000450	....	....	
10,600	53,000	.003000	.000250	....	....	
10,800	54,000	.003300	.000300	....	....	
11,000	55,000	.004050	.000750	.002050	.001850	
11,200	56,000	.004550	.000500	....	....	
11,400	57,000	.005350	.000800	....	....	
11,600	58,000	.006100	.000750	....	....	
11,800	59,000	.006750	.000650	....	....	
12,000	60,000	.007400	.000650	....	....	
12,400	62,000	.009600	.002200	....	....	
12,800	64,000	.011000	.001400	....	....	
13,200	66,000	.012350	.001350	....	....	
13,600	68,000	.014100	.001750	....	....	
14,000	70,000	.016050	.001950	....	....	
14,400	72,000	.018600	.002550	....	....	
14,800	74,000	.021000	.002400	....	....	
15,200	76,000	.022900	.001900	....	....	
15,600	78,000	.025250	.002350	....	....	
16,000	80,000	.027750	.002500	....	....	
16,400	82,000	.030250	.002500	....	....	
16,800	84,000	.033200	.002950	....	....	
17,200	86,000	.036850	.003650	....	....	
17,600	88,000	.040350	.003500	....	....	
18,000	90,000	.045150	.004800	....	....	
18,400	92,000	.051150	.006000	....	....	
18,800	94,000	.0600	.008850	....	....	
19,200	96,000	.0700	.0100	....	....	
19,600	98,000	.0800	.0100	....	....	
19,750	98,750	.1250	.0450	....	....	Tensile strength.

General summary.

Specific gravity	7.8641
Tensile strength per square inch of original section.........pounds..	98,750
Elastic limit per square inch of original section.........do...	50,000
Elongation per inch after rupture.........inch..	0.1750
Elongation per inch under strain at elastic limit.........do...	.001700
Reduction in diameter at point of rupture.........do...	.105
Reduction in area after rupture, per centum of original section	37.1
Position of rupture	″.45 from neck
Character of broken surface	silky
Elongation of inch sections	″.27*, ″.08

No. 1115.

Marks, $^{32\,J_9}_{B\,T_2\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001050	.000200	.000050	.000050	
8,000	40,000	.001300	.000250	.000100	.000050	
9,000	45,000	.001450	.000150	....	....	
9,200	46,000	.001450	0.	....	....	
9,400	47,000	.001500	.000050	....	....	
9,600	48,000	.001550	.000050	....	....	Elastic limit.
9,800	49,000	.001700	.000150	....	....	
10,000	50,000	.001900	.000200	.000200	.000100	
10,200	51,000	.002450	.000550	....	....	
10,400	52,000	.002650	.000200	....	....	
10,600	53,000	.003100	.000450	....	....	
10,800	54,000	.003550	.000450	....	....	
11,000	55,000	.004300	.000750	....	....	
11,200	56,000	.005000	.000600	....	....	
11,400	57,000	.005650	.000750	....	....	
11,600	58,000	.006350	.000700	....	....	
11,800	59,000	.007200	.000850	....	....	
12,000	60,000	.007750	.000550	....	....	
12,400	62,000	.009700	.001950	....	....	
12,800	64,000	.011200	.001500	....	....	
13,200	66,000	.012850	.001650	....	....	
13,600	68,000	.014800	.001950	....	....	
14,000	70,000	.016600	.001800	....	....	
14,400	72,000	.019550	.002950	....	....	
14,800	74,000	.020850	.001300	....	....	
15,200	76,000	.022750	.001900	....	....	
15,600	78,000	.025400	.002650	....	....	
16,000	80,000	.028250	.002850	....	....	
16,400	82,000	.031200	.002950	....	....	
16,800	84,000	.034050	.002850	....	....	
17,200	86,000	.037800	.003750	....	....	
17,600	88,000	.041100	.003300	....	....	
18,000	90,000	.046250	.005150	....	....	
18,400	92,000	.052250	.006000	....	....	
18,800	94,000	.059500	.007250	....	....	
19,200	96,000	.0650	.0055	....	....	
19,600	98,000	.0900	.0250	....	....	
19,920	99,600	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	99,600
Elastic limit per square inch of original section	do...	48,000
Elongation per inch after rupture	inch..	0.1250
Elongation per inch under strain at elastic limit	do...	.001550
Reduction in diameter at point of rupture	do...	.015
Reduction in area after rupture, per centum of original section		5.7
Position of rupture		at neck
Character of broken surface		granular; defective spot near the circumference
Elongation of inch sections		″.12*, ″.13

No. 555.

Marks, $^{32\ J,}_{B\ T,\ M}$
Length, 4''.49.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000400	.000150	0.	....	
10,000	20,000	.000500	.000100	0.	....	
12,500	25,000	.000650	.000150	0.	....	
15,000	30,000	.000800	.000150	0.	....	
17,500	35,000	.001000	.000200	0.	....	
20,000	40,000	.001200	.000200	0.	....	
20,500	41,000	.001250	.000050	....	....	
21,000	42,000	.001250	0.	....	....	
21,500	43,000	.001300	.000050	....	....	
22,000	44,000	.001300	0.	....	....	
22,500	45,000	.001350	.000050	0.	....	
23,000	46,000	.001350	0.	....	....	
23,500	47,000	.001400	.000050	....	....	
24,000	48,000	.001400	0.	....	....	
24,500	49,000	.001450	.000050	....	....	
25,000	50,000	.001500	.000050	0.	....	
25,500	51,000	.001550	.000050	....	....	
26,000	52,000	.001750	.000200	....	....	
26,500	53,000	.001900	.000150	....	....	
27,000	54,000	.002000	.000100	....	....	Elastic limit.
27,500	55,000	.002200	.000200	.000350	.000350	
28,000	56,000	.002300	.000100	....	....	
28,500	57,000	.002550	.000250	....	....	
29,000	58,000	.002800	.000250	....	....	
29,500	59 000	.003000	.000200	....	....	
30,000	60,000	.003250	.000250	.001250	.000900	
30,500	61,000	.003700	.000450	....	....	
31,000	62,000	.004000	.000300	....	....	
31,500	63,000	.004250	.000250	....	....	
32,000	64,000	.004700	.000450	....	....	
32,500	65,000	.005100	.000400	.002850	.001600	
47,400	94,800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	54,000
Compression per inch under stress at elastic limit	inch..	0.002000
Ultimate strength per square inch of original section	pounds..	94.800
Manner of failure		triple flexure

[Additional specimens.]

No. 2212.

Marks, $\overset{32\ \mathrm{J}}{\mathrm{B\,T_4\,M}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000350	.000200	0.	....	
3, 000	15, 000	.000600	.000250	0.	....	
4, 000	20, 000	.000750	.000150	0.	....	
5, 000	25, 000	.000850	.000100	0.	....	
6, 000	30, 000	.001000	.000150	0.	....	
7, 000	35, 000	.001250	.000250	0.	....	
8, 000	40, 000	.001350	.000100	0.	....	
9, 000	45, 000	.001500	.000150	0.	....	
9, 600	48, 000	.001650	.000150	....	....	
9, 800	49, 000	.001700	.000050	....	....	Elastic limit.
10, 000	50, 000	.002650	.000950	....	....	
10, 200	51, 000	.004300	.001650	....	....	
10, 400	52, 000	.005950	.001650	....	....	
10, 600	53, 000	.007000	.001050	....	....	
10, 800	54, 000	.008000	.001000	....	....	
11, 000	55, 000	.008650	.000650	....	....	
11, 200	56, 000	.009350	.000700	....	....	
11, 400	57, 000	.010100	.000750	....	....	
11, 600	58, 000	.011050	.000950	....	....	
11, 800	59, 000	.011750	.000700	....	....	
12, 000	60, 000	.012900	.001150	....	....	
12, 400	62, 000	.014600	.001700	....	....	
12, 800	64, 000	.016200	.001600	....	....	
13, 200	66, 000	.018500	.002300	....	....	
13, 600	68, 000	.020500	.002000	....	....	
14, 000	70, 000	.022650	.002150	....	....	
14, 400	72, 000	.025000	.002350	....	....	
14, 800	74, 000	.028050	.003050	....	....	
15, 200	76, 000	.030300	.002250	....	....	
15, 600	78, 000	.033300	.003000	....	....	
16, 000	80, 000	.036600	.003300	....	....	
16, 400	82, 000	.040250	.003650	....	....	
16, 800	84, 000	.045000	.004750	....	....	
17, 200	86, 000	.050300	.005300	....	....	
17, 600	88, 000	.056500	.006200	....	....	
18, 000	90, 000	.066000	.009500	....	....	
18, 400	92, 000	.0850	.0190	....	....	
18, 800	94, 000	.1050	.0200	....	....	
18, 980	94, 900	.1450	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	**pounds**	**94, 900**
Elastic limit per square inch of original section	**do**	**49, 000**
Elongation per inch after rupture	**inch**	**0. 2350**
Elongation per inch under strain at elastic limit	**do**	**.001700**
Reduction in diameter at point of rupture	**do**	**.085**
Reduction in area after rupture, per centum of original section		**30. 7**
Position of rupture		**″.05 from middle of stem**
Character of broken surface		**silky**
Elongation of inch sections		**″.23*, ″.24***

No. 2213.

Marks, $^{32\,J,}_{B\,T,\,M}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000700	.000100	0.	....	
6, 000	30, 000	.000900	.000200	0.	....	
7, 000	35, 000	.001100	.000200	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001400	.000150	0.	....	
9, 200	46, 000	.001500	.000100	....	....	
9, 400	47, 000	.001550	.000050	....	....	
9, 600	48, 000	.001600	.000050	....	....	Elastic limit.
9, 800	49, 000	.001750	.000150	....	....	
10, 000	50, 000	.006050	.004300	....	....	
10, 200	51, 000	.007000	.000950	....	....	
10, 400	52, 000	.008250	.001250	....	....	
10, 600	53, 000	.008900	.000650	....	....	
10, 800	54, 000	.009550	.000650	....	....	
11, 000	55, 000	.010300	.000750	....	....	
11, 200	56, 000	.011250	.000950	....	....	
11, 400	57, 000	.012150	.000900	....	....	
11, 600	58, 000	.013350	.001200	....	....	
11, 800	59, 000	.014550	.001200	....	....	
12, 000	60 000	.015350	.000800	....	....	
12, 400	62, 000	.017250	.001900	....	....	
12, 800	64, 000	.019250	.002000	....	....	
13, 200	66, 000	.022000	.002750	....	....	
13, 600	68, 000	.024500	.002500	....	....	
14, 000	70, 000	.027050	.002550	....	....	
14, 400	72, 000	.030000	.002950	....	....	
14, 800	74, 000	.033000	.003000	....	....	
15, 200	76, 000	.036750	.003750	....	....	
15, 600	78, 000	.040600	.003850	....	....	
16, 000	80, 000	.045750	.005150	....	....	
16, 400	82, 000	.051250	.005500	....	....	
16, 800	84, 000	.058500	.007250	....	....	
17, 200	86, 000	.067500	.009000	....	....	
17, 600	88, 000	.0850	.0175	....	....	
17, 900	89, 500	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	89, 500
Elastic limit per square inch of original section	do...	48, 000
Elongation per inch after rupture	inch..	0. 1050
Elongation per inch under strain at elastic limit	do...	.001600
Reduction in diameter at point of rupture	do...	.035
Reduction in area after rupture, per centum of original section		13. 2
Position of rupture		".37 from neck
Character of broken surface		granular; dull flaky spot at the circumference
Elongation of inch sections		".12*, ".09

No. 2214.

Marks, $^{32\ J}_{B\ T_6\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000400	.000250	0.	....	
3, 000	15, 000	.000600	.000200	0.	....	
4, 000	20, 000	.000750	.000150	0.	....	
5, 000	25, 000	.000900	.000150	0.	....	
6, 000	30, 000	.001050	.000150	0.	....	
7, 000	35, 000	.001250	.000200	0.	....	
8, 000	40, 000	.001400	.000150	0.	....	
9, 000	45, 000	.001550	.000150	0.	....	
9, 200	46, 000	.001600	.000050	....	....	
9, 400	47, 000	.001650	.000050	....	....	
9, 600	48, 000	.001700	.000050	....	....	
9, 800	49, 000	.001800	.000100	....	....	Elastic limit.
10, 000	50, 000	.003000	.001200	....	....	
10, 200	51, 000	.005000	.002000	....	....	
10, 400	52, 000	.005800	.000800	....	....	
10, 600	53, 000	.006600	.000800	....	....	
10, 800	54, 000	.007300	.000700	....	....	
11, 000	55, 000	.007950	.000650	....	....	
11, 200	56, 000	.008600	.000750	....	....	
11, 400	57, 000	.009450	.000850	....	....	
11, 600	58, 000	.010250	.000800	....	....	
11, 800	59, 000	.010950	.000700	....	....	
12, 000	60, 000	.011750	.000800	....	....	
12, 400	62, 000	.013750	.002000	....	....	
12, 800	64, 000	.015550	.001800	....	....	
13, 200	66, 000	.017400	.001850	....	....	
13, 600	68, 000	.019800	.002400	....	....	
14, 000	70, 000	.022100	.002300	....	....	
14, 400	72, 000	.025000	.002900	....	....	
14, 800	74, 000	.027250	.002250	....	....	
15, 200	76, 000	.029500	.002250	....	....	
15, 600	78, 000	.032350	.002850	....	....	
16, 000	80, 000	.036050	.003700	....	....	
16, 400	82, 000	.040000	.003950	....	....	
16, 800	84, 000	.044250	.004250	....	....	
17, 200	86, 000	.049500	.005250	....	....	
17, 600	88, 000	.056000	.006500	....	....	
18, 000	90, 000	.064000	.008060	....	....	
18, 400	92, 000	.0800	.0160	....	....	
18, 800	94, 000	.1050	.0250	....	....	
18, 820	94, 100	.1200	.0150	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	94, 100
Elastic limit per square inch of original section	do...	49, 000
Elongation per inch after rupture	inch..	0. 2000
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.125
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		″.62 from neck
Character of broken surface		silky
Elongation of inch sections		″.09, ″.31*

NEW JACKET, No. 9.

No. 2549.

Marks, $\overset{32\ J_9}{B\ T_7\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000550	.000200	0.	....	
4,000	20,000	.000700	.000150	0.	....	
5,000	25,000	.000900	.000200	0.	....	
6,000	30,000	.001100	.000200	0.	....	
7,000	35,000	.001250	.000150	....	....	
8,000	40,000	.001450	.000200	....	....	
9,000	45,000	.001600	.000150	....	....	
9,200	46,000	.001650	.000050	....	....	
9,400	47,000	.001700	.000050	....	....	
9,600	48,000	.001700	0.	....	....	
9,800	49,000	.001750	.000050	....	....	
10,000	50,000	.001800	.000050	....	....	
10,200	51,000	.001850	.000050	....	....	Elastic limit.
10,400	52,000	.002050	.000200	....	....	
10,600	53,000	.002200	.000150	....	....	
10,800	54,000	.002450	.000250	....	....	
11,000	55,000	.002900	.000450	....	....	
11,200	56,000	.003600	.000700	....	....	
11,400	57,000	.004250	.000650	....	....	
11,600	58,000	.005000	.000750	....	....	
11,800	59,000	.005500	.000500	....	....	
12,000	60,000	.006150	.000650	....	....	
12,400	62,000	.007550	.001400	....	....	
12,800	64,000	.009050	.001500	....	....	
13,200	66,000	.010100	.001050	....	....	
13,600	68,000	.011800	.001700	....	....	
14,000	70,000	.013450	.001650	....	....	
14,400	72,000	.015000	.001550	....	....	
14,800	74,000	.016400	.001400	....	....	
15,200	76,000	.018100	.001700	....	....	
15,600	78,000	.019600	.001500	....	....	
16,000	80,000	.021550	.001950	....	....	
16,400	82,000	.023750	.002200	....	....	
16,800	84,000	.026000	.002250	....	....	
17,200	86,000	.027900	.001900	....	....	
17,600	88,000	.030600	.002700	....	....	
18,000	90,000	.033100	.002500	....	....	
18,400	92,000	.036050	.002950	....	....	
18,800	94,000	.039500	.003450	....	....	
19,200	96,000	.043500	.004000	....	....	
19,600	98,000	.048050	.004550	....	....	
20,000	100,000	.054000	.005950	....	....	
20,400	102,000	.0600	.0060	....	....	
20,800	104,000	.0750	.0150	....	....	
21,200	106,000	.0950	.0200	....	....	
21,280	106,400	.1100	.0150	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	106,400
Elastic limit per square inch of original section....................do...	51,000
Elongation per inch after rupture....................inch..	0.1700
Elongation per inch under strain at elastic limit....................do...	.001850
Reduction in diameter at point of rupture....................do...	.105
Reduction in area after rupture, per centum of original section	37.1
Position of rupture....................	¼ inch from neck
Character of broken surface....................	granular; dull center
Elongation of inch sections	″.24*, ″.10

No. 2550.

Marks, $_{\mathrm{B}}\overset{32}{\mathrm{T}},\overset{\mathrm{J},}{\mathrm{M}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000500	.000150	0.	....	
5,000	25,000	.000650	.000150	0.	....	
6,000	30,000	.000850	.000200	0.	....	
7,000	35,000	.001050	.000200	....	....	
8,000	40,000	.001200	.000150	....	....	
9,000	45,000	.001350	.000150	....	....	
9,200	46,000	.001400	.000050	....	....	
9,400	47,000	.001450	.000050	....	....	
9,600	48,000	.001450	0.	....	....	
9,800	49,000	.001500	.000050	....	....	
10,000	50,000	.001550	.000050	....	....	
10,200	51,000	.001600	.000050	....	....	
10,400	52,000	.001700	.000100	....	....	Elastic limit.
10,600	53,000	.002000	.000300	....	....	
10,800	54,000	.002350	.000350	....	....	
11,000	55,000	.002850	.000500	....	....	
11,200	56,000	.003350	.000500	....	....	
11,400	57,000	.003950	.000600	....	....	
11,600	58,000	.004650	.000700	....	....	
11,800	59,000	.005600	.000950	....	....	
12,000	60,000	.006250	.000650	....	....	
12,400	62,000	.007400	.001150	....	....	
12,800	64,000	.008900	.001500	....	....	
13,200	66,000	.010500	.001600	....	....	
13,600	68,000	.011750	.001250	....	....	
14,000	70,000	.013250	.001500	....	....	
14,400	72,000	.014650	.001400	....	....	
14,800	74,000	.016350	.001700	....	....	
15,200	76,000	.017850	.001500	....	....	
15,600	78,000	.019650	.001800	....	....	
16,000	80,000	.022000	.002350	....	....	
16,400	82,000	.024000	.002000	....	....	
16,800	84,000	.025850	.001850	....	....	
17,200	86,000	.028000	.002150	....	....	
17,600	88,000	.030600	.002600	....	....	
18,000	90,000	.033500	.002900	....	....	
18,400	92,000	.036750	.003250	....	....	
18,800	94,000	.040150	.003400	....	....	
19,200	96,000	.044250	.004100	....	....	
19,600	98,000	.049500	.005250	....	....	
20,000	100,000	.056000	.006500	....	....	
20,400	102,000	.0650	.0090	....	....	
20,800	104,000	.0850	.0200	....	....	
21,180	105,900	.1150	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	105,000
Elastic limit per square inch of original section	do	52,000
Elongation per inch after rupture	inch	0.1750
Elongation per inch under strain at elastic limit	do	.001700
Reduction in diameter at point of rupture	do	.085
Reduction in area after rupture, per centum of original section		30.7
Position of rupture		″.60 from neck
Character of broken surface		granular, radiating from a dull spot at the circumference
Elongation of inch sections		″.11, ″.24*

No. 661.

Marks, ${}_{\mathrm{B}}{}^{32\ \mathrm{J}_9}_{\mathrm{T}_9\mathrm{M}}$
Length, 4″.502.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000267	.000167	0.	....	
7,500	15,000	.000433	.000166	0.	....	
10,000	20,000	.000600	.000167	0.	....	
12,500	25,000	.000767	.000167	0.	....	
15,000	30,000	.000933	.000166	0.	....	
17,500	35,000	.001100	.000167	0.	....	
20,000	40,000	.001300	.006200	0.	....	
20,500	41,000	.001333	.000033	....	....	
21,000	42,000	.001367	.000034	....	....	
21,500	43,000	.001367	0.	....	....	
22,000	44,000	.001400	.000033	....	....	
22,500	45,000	.001433	.000033	....	....	
23,000	46,000	.001500	.000067	....	....	
23,500	47,000	.001500	0.	....	....	
24,000	48,000	.001533	.000033	....	....	
24,500	49,000	.001567	.000034	....	....	
25,000	50,000	.001633	.000066	....	....	
25,500	51,000	.001667	.000034	....	....	Elastic limit.
26,000	52,000	.002000	.000333	....	....	
26,500	53,000	.002400	.000400	....	....	
27,000	54,000	.003167	.000767	....	....	
27,500	55,000	.003833	.000666	....	....	
28,000	56,000	.004833	.001000	....	....	
50,400	100,800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	51,000
Compression per inch under stress at elastic limit	inch..	0.001667
Ultimate strength per square inch of original section	pounds..	100,800
Manner of failure		triple flexure

No. 2224.

Marks, $\overset{32\,J_{18}}{B\,T_1\,M}$

Diameter, ″.505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000050	.000050	0.	....	
2,000	10,000	.000200	.000150	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000500	.000150	0.	....	
5,000	25,000	.000650	.000150	0.	....	
6,000	30,000	.000800	.000150	0.	....	
7,000	35,000	.000950	.000150	0.	....	
8,000	40,000	.001150	.000200	0.	....	
9,000	45,000	.001400	.000250	.000050	.000050	
9,200	46,000	.001400	0.	....	....	
9,400	47,000	.001450	.000050	....	....	
9,600	48,000	.001450	0.	....	....	
9,800	49,000	.001500	.000050	....	....	
10,000	50,000	.001550	.000050	.000050	0.	
10,200	51,000	.001550	0.	....	....	
10,400	52,000	.001600	.000050	....	....	
10,600	53,000	.001600	0.	....	....	
10,800	54,000	.001700	.000100	....	....	
11,000	55,000	.001750	.000050	....	....	Elastic limit.
11,200	56,000	.005050	.003300	....	....	
11,400	57,000	.005600	.000550	....	....	
11,600	58,000	.006150	.000550	....	....	
11,800	59,000	.006650	.000500	....	....	
12,000	60,000	.007350	.000700	....	....	
12,400	62,000	.008750	.001400	....	....	
12,800	64,000	.010600	.001850	....	....	
13,200	66,000	.012400	.001800	....	....	
13,600	68,000	.014000	.001600	....	....	
14,000	70,000	.015700	.001700	....	....	
14,400	72,000	.018000	.002300	....	....	
14,800	74,000	.020000	.002000	....	....	
15,200	76,000	.022500	.002500	....	....	
15,600	78,000	.024750	.002250	....	....	
16,000	80,000	.027000	.002250	....	....	
16,400	82,000	.029750	.002750	....	....	
16,800	84,000	.033000	.003250	....	....	
17,200	86,000	.036500	.003500	....	....	
17,600	88,000	.040100	.003600	....	....	
18,000	90,000	.045000	.004900	....	....	
18,400	92,000	.050600	.005600	....	....	
18,800	94,000	.0600	.0094	....	....	
19,200	96,000	.0700	.0100	....	....	
19,600	98,000	.0900	.0200	....	....	
19,770	98,850	.1100	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98,850
Elastic limit per square inch of original section	do...	55,000
Elongation per inch after rupture	inch..	0.1800
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		″.47 from neck
Character of broken surface		silky
Elongation of inch sections		″.27*, ″.09

No. 2225.

Marks, $\overset{32\ J_{10}}{B\ T_2\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001150	.000150	0.	....	
8,000	40,000	.001300	.000150	0.	....	
9,000	45,000	.001400	.000100	0.	....	
9,200	46,000	.001450	.000050	....	....	
9,400	47,000	.001500	.000050	....	....	
9,600	48,000	.001600	.000100	....	....	
9,800	49,000	.001650	.000050	....	....	
10,000	50,000	.001700	.000050	....	....	
10,200	51,000	.001750	.000050	....	....	
10,400	52,000	.001750	0.	....	....	
10,600	53,000	.001800	.000050	....	....	
10,800	54,000	.001800	0.	....	....	
11,000	55,000	.001850	.000050	....	....	
11,200	56,000	.001900	.000050	....	....	
11,400	57,000	.001950	.000050	....	....	Elastic limit.
11,600	58,000	.003900	.001950	....	....	
11,800	59,000	.004700	.000800	....	....	
12,000	60,000	.005550	.000850	....	....	
12,400	62,000	.006000	.001050	....	....	
12,800	64,000	.007800	.001200	....	....	
13,200	66,000	.009200	.001400	....	....	
13,600	68,000	.010500	.001300	....	....	
14,000	70,000	.012250	.001750	....	....	
14,400	72,000	.014100	.001850	....	....	
14,800	74,000	.015750	.001650	....	....	
15,200	76,000	.017500	.001750	....	....	
15,600	78,000	.019200	.001700	....	....	
16,000	80,000	.021850	.002650	....	....	
16,400	82,000	.023800	.001950	....	....	
16,800	84,000	.026100	.002300	....	....	
17,200	86,000	.028500	.002400	....	....	
17,600	88,000	.031100	.002600	....	....	
18,000	90,000	.034250	.003150	....	....	
18,400	92,000	.037800	.003550	....	....	
18,800	94,000	.041750	.003950	....	....	
19,200	96,000	.046500	.004750	....	....	
19,600	98,000	.052000	.005500	....	....	
20,000	100,000	.0600	.0080	....	....	
20,400	102,000	.0750	.0150	....	....	
20,760	103,800	.1000	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	103,800
Elastic limit per square inch of original section	do...	57,000
Elongation per inch after rupture	inch..	0.1550
Elongation per inch under strain at elastic limit	do...	.001950
Reduction in diameter at point of rupture	do...	.085
Reduction in area after rupture, per centum of original section		30.7
Position of rupture		″.1 from middle of stem
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.21*, ″.10

No. 617.

Marks, $^{32\ J}_{B\ T_3\ M}$
Length, 4″.492.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000200	.000200	0.	....	
5,000	10,000	.000400	.000200	0.	....	
7,500	15,000	.000550	.000150	0.	....	
10,000	20,000	.000650	.000100	0.	....	
12,500	25,000	.000800	.000150	0.	....	
15,000	30,000	.001000	.000200	0.	....	
17,500	35,000	.001200	.000200	0.	....	
20,000	40,000	.001350	.000150	0.	....	
20,500	41,000	.001400	.000050	....	....	
21,000	42,000	.001400	0.	....	....	
21,500	43,000	.001450	.000050	....	....	
22,000	44,000	.001500	.000050	....	....	
22,500	45,000	.001500	0.	0.	....	
23,000	46,000	.001550	.000050	....	....	
23,500	47,000	.001600	.000050	....	....	
24,000	48,000	.001650	.000050	....	....	
24,500	49,000	.001750	.000100	....	....	
25,000	50,000	.001800	.000050	.000100	.000100	Elastic limit.
25,500	51,000	.002200	.000400	....	....	
26,000	52,000	.003650	.001450	....	....	
26,500	53,000	.005250	.001600	....	....	
27,000	54,000	.006000	.000750	....	....	
27,500	55,000	.007150	.001150	.005000	.004900	
48,100	96,200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	50,000
Compression per inch under stress at elastic limit	inch..	0.001800
Ultimate strength per square inch of original section	pounds..	96,200
Manner of failure		triple flexture

No. 2519.

Marks, $\overset{32\ J_{11}}{B\ T_1\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000600	.000200	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001250	.000150	0.	....	
9,000	45,000	.001500	.000250	....	....	
9,200	46,000	.001600	.000100	....	....	
9,400	47,000	.001700	.000100	....	....	
9,600	48,000	.001750	.000050	....	....	Elastic limit.
9,800	49,000	.001950	.000200	....	....	
10,000	50,000	.003050	.001100	....	....	
10,200	51,000	.003400	.000350	....	....	
10,400	52,000	.003750	.000350	....	....	
10,600	53,000	.004350	.000600	....	....	
10,800	54,000	.004900	.000550	....	....	
11,000	55,000	.005600	.000700	....	....	
11,200	56,000	.006150	.000550	....	....	
11,400	57,000	.006850	.000700	....	....	
11,600	58,000	.007500	.000650	....	....	
11,800	59,000	.008250	.000750	....	....	
12,000	60,000	.009100	.000850	....	....	
12,400	62,000	.010850	.001750	....	....	
12,800	64,000	.012000	.001150	....	....	
13,200	66,000	.014750	.002750	....	....	
13,600	68,000	.016500	.001750	....	....	
14,000	70,000	.018100	.001600	....	....	
14,400	72,000	.020100	.002000	....	....	
14,800	74,000	.022050	.001950	....	....	
15,200	76,000	.024300	.002250	....	....	
15,600	78,000	.027150	.002850	....	....	
16,000	80,000	.029750	.002600	....	....	
16,400	82,000	.032750	.003000	....	....	
16,800	84,000	.036000	.003250	....	....	
17,200	86,000	.039750	.003750	....	....	
17,600	88,000	.045000	.005250	....	....	
18,000	90,000	.0550	.0100	....	....	
18,400	92,000	.0650	.0100	....	....	
18,800	94,000	.0750	.0100	....	....	
19,200	96,000	.0850	.0100	....	....	
19,500	97,500	.1250	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	97,500
Elastic limit per square inch of original section..........do...	48,000
Elongation per inch after rupture..........inch..	0.1650
Elongation per inch under strain at elastic limit..........do...	.001750
Reduction in diameter at point of rupture..........do...	.075
Reduction in area after rupture, per centum of original section..........	27.4
Position of rupture..........	[illegible] inch from neck
Character of broken surface..........	granular; dull spot at circumference
Elongation of inch sections..........	″.22*, ″.11

No. 2520.

Marks, $\overset{32\ J_{11}}{B\ T_2\ M}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000250	.000100	0	....	
3, 000	15, 000	.000500	.000250	0.	....	
4, 000	20, 000	.000600	.000100	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000950	.000200	0.	....	
7, 000	35, 000	.001100	.000150	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001500	.000250	....	....	
9, 200	46, 000	.001600	.000100	....	....	
9, 400	47, 000	.001650	.000050	....	....	Elastic limit.
9, 600	48, 000	.002000	.000350	....	....	
9, 800	49, 000	.002550	.000550	....	....	
10, 000	50, 000	.003050	.000500	....	....	
10, 200	51, 000	.003500	.000450	....	....	
10, 400	52, 000	.004250	.000750	....	....	
10, 600	53, 000	.005050	.000800	....	....	
10, 800	54, 000	.005650	.000600	....	....	
11, 000	55, 000	.006250	.000600	....	....	
11, 200	56, 000	.007000	.000750	....	....	
11, 400	57, 000	.007800	.000800	....	....	
11, 600	58, 000	.008550	.000750	....	....	
11, 800	59, 000	.009350	.000800	....	....	
12, 000	60, 000	.010100	.000750	....	....	
12, 400	62, 000	.011850	.001750	....	....	
12, 800	64, 000	.014000	.002150	....	....	
13, 200	66, 000	.015600	.001600	....	....	
13, 600	68, 000	.017900	.002300	....	....	
14, 000	70, 000	.020000	.002100	....	....	
14, 400	72, 000	.022050	.002050	....	....	
14, 800	74, 000	.024000	.001950	....	....	
15, 200	76, 000	.026500	.002500	....	....	
15, 600	78, 000	.029250	.002750	....	....	
16, 000	80, 000	.032250	.003000	....	....	
16, 400	82, 000	.035600	.003350	....	....	
16, 800	84, 000	.039750	.004150	....	....	
17, 200	86, 000	.045000	.005250	....	....	
17, 600	88, 000	.0550	.0100	....	....	
18, 000	90, 000	.0600	.0050	....	....	
18, 400	92, 000	.0650	.0050	....	....	
18, 800	94, 000	.0800	.0150	....	....	
19, 200	96, 000	.1000	.0200	....	....	
19, 300	96, 500	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96, 500
Elastic limit per square inch of original section	do...	47, 000
Elongation per inch after rupture	inch..	0. 1200
Elongation per inch under strain at elastic limit	do...	.001650
Reduction in diameter at point of rupture	do...	.034
Reduction in area after rupture, per centum of original section		13. 2
Position of rupture		″.15 from neck
Character of broken surface		granular; opened cracks in surface of stem
Elongation of inch sections		″.13*, ″.11

No. 2519.

Marks, $\substack{32\,J_{11}\\ B\,T_1\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.		
2,000	10,000	.000250	.000150	0.		
3,000	15,000	.000400	.000150	0.		
4,000	20,000	.000600	.000200	0.		
5,000	25,000	.000800	.000200	0.		
6,000	30,000	.000950	.000150	0.		
7,000	35,000	.001100	.000150	0.		
8,000	40,000	.001250	.000150	0.		
9,000	45,000	.001500	.000250			
9,200	46,000	.001600	.000100			
9,400	47,000	.001700	.000100			
9,600	48,000	.001750	.000050			Elastic limit.
9,800	49,000	.001950	.000200			
10,000	50,000	.003050	.001100			
10,200	51,000	.003400	.000350			
10,400	52,000	.003750	.000350			
10,600	53,000	.004350	.000600			
10,800	54,000	.004900	.000550			
11,000	55,000	.005600	.000700			
11,200	56,000	.006150	.000550			
11,400	57,000	.006850	.000700			
11,600	58,000	.007500	.000650			
11,800	59,000	.008250	.000750			
12,000	60,000	.009100	.000850			
12,400	62,000	.010850	.001750			
12,800	64,000	.012000	.001150			
13,200	66,000	.014750	.002750			
13,600	68,000	.016500	.001750			
14,000	70,000	.018100	.001600			
14,400	72,000	.020100	.002000			
14,800	74,000	.022050	.001950			
15,200	76,000	.024300	.002250			
15,600	78,000	.027150	.002850			
16,000	80,000	.029750	.002600			
16,400	82,000	.032750	.003000			
16,800	84,000	.036000	.003250			
17,200	86,000	.039750	.003750			
17,600	88,000	.045000	.005250			
18,000	90,000	.0550	.0100			
18,400	92,000	.0650	.0100			
18,800	94,000	.0750	.0100			
19,200	96,000	.0850	.0100			
19,500	97,500	.1250	.0400			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	97,500
Elastic limit per square inch of original section	do	48,000
Elongation per inch after rupture	inch	0.1650
Elongation per inch under strain at elastic limit	do	.001750
Reduction in diameter at point of rupture	do	.075
Reduction in area after rupture, per centum of original section		27.4
Position of rupture		⅝ inch from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.22*, ″.11

No. 2520.

Marks, $^{32\,J_{11}}_{B\,T_2\,M}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000500	.000250	0.	....	
4,000	20,000	.000600	.000100	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.003950	.000200	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001250	.000150	0.	....	
9,000	45,000	.001500	.000250	....	....	
9,200	46,000	.001600	.000100	....	....	
9,400	47,000	.001650	.000050	....	....	Elastic limit.
9,600	48,000	.002000	.000350	....	....	
9,800	49,000	.002550	.000550	....	....	
10,000	50,000	.003050	.000500	....	....	
10,200	51,000	.003500	.000450	....	....	
10,400	52,000	.004250	.000750	....	....	
10,600	53,000	.005050	.000800	....	....	
10,800	54,000	.005650	.000600	....	....	
11,000	55,000	.006250	.000600	....	....	
11,200	56,000	.007000	.000750	....	....	
11,400	57,000	.007800	.000800	....	....	
11,600	58,000	.008550	.000750	....	....	
11,800	59,000	.009350	.000800	....	....	
12,000	60,000	.010100	.000750	....	....	
12,400	62,000	.011850	.001750	....	....	
12,800	64,000	.014000	.002150	....	....	
13,200	66,000	.015600	.001600	....	....	
13,600	68,000	.017900	.002300	....	....	
14,000	70,000	.020000	.002100	....	....	
14,400	72,000	.022050	.002050	....	....	
14,800	74,000	.024000	.001950	....	....	
15,200	76,000	.026500	.002500	....	....	
15,600	78,000	.029250	.002750	....	....	
16,000	80,000	.032250	.003000	....	....	
16,400	82,000	.035600	.003350	....	....	
16,800	84,000	.039750	.004150	....	....	
17,200	86,000	.045000	.005250	....	....	
17,600	88,000	.0550	.0100	....	....	
18,000	90,000	.0600	.0050	....	....	
18,400	92,000	.0650	.0050	....	....	
18,800	94,000	.0800	.0150	....	....	
19,200	96,000	.1000	.0200	....	....	
19,300	96,500	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96,500
Elastic limit per square inch of original section	do...	47,000
Elongation per inch after rupture	inch..	0.1200
Elongation per inch under strain at elastic limit	do...	.001650
Reduction in diameter at point of rupture	do...	.034
Reduction in area after rupture, per centum of original section		13.2
Position of rupture		″.15 from neck
Character of broken surface		granular; opened cracks in surface of stem
Elongation of inch sections		″.13*, ″.11

No. 649.

Marks, $^{32\,J\,11}_{B\,T\,3M}$
Length, 4″.485.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000133	.000133	0.	....	
5,000	10,000	.000267	.000134	0.	....	
7,500	15,000	.000433	.000166	0.	....	
10,000	20,000	.000600	.000167	0.	....	
12,500	25,000	.000767	.000167	.000033	.000033	
15,000	30,000	.000967	.000200	.000067	.000034	
17,500	35,000	.001167	.000200	.000067	0.	
20,000	40,000	.001333	.000166	.000133	.000066	
20,500	41,000	.001367	.000034	....	....	
21,000	42,000	.001400	.000033	....	....	
21,500	43,000	.001433	.000033	....	....	Elastic limit.
22,000	44,000	.001767	.000334	....	....	
22,500	45,000	.002100	.000333	....	....	
23,000	46,000	.002433	.000333	....	....	
23,500	47,000	.002567	.000134	....	....	
24,000	48,000	.002867	.000300	....	....	
24,500	49,000	.003500	.000633	....	....	
25,000	50,000	.004000	.000500	....	....	
45,880	91,760	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds..	43,000
Compression per inch under stress at elastic limit ....inch..	0.001433
Ultimate strength per square inch of original section ....pounds..	91,760
Manner of failure	triple flexure

NEW JACKET NO. 11.

No. 2711.

Marks, $^{32\ J_{11}}_{B\ T_4\ M}$

Diameter, ″.505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pound.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.050150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000800	.000200	0.	....	
6, 000	30, 000	.001000	.000200	0.	....	
7, 000	35, 000	.001150	.000150	0.	....	
8, 000	40, 000	.001300	.000150	0.	....	
9, 000	45, 000	.001450	.000150	....	....	
9, 200	46, 000	.001500	.000050	....	....	
9, 400	47, 000	.001550	.000050	....	....	
9, 600	48, 000	.001550	0.	....	....	
9, 800	49, 000	.001600	.000050	....	....	
10, 000	50, 000	.001650	.000050	....	....	
10, 200	51, 000	.001700	.000050	....	....	Elastic limit.
10, 400	52, 000	.002000	.000300	....	....	
10, 600	53, 000	.003000	.001000	....	....	
10, 800	54, 000	.003750	.000750	....	....	
11, 000	55, 000	.004650	.000900	....	....	
11, 200	56, 000	.005600	.000950	....	....	
11, 400	57, 000	.006200	.000600	....	....	
11, 600	58, 000	.007050	.000850	....	....	
11, 800	59, 000	.007350	.000300	....	....	
12, 000	60, 000	.008900	.001550	....	....	
12, 400	62, 000	.010150	.001250	....	....	
12, 800	64, 000	.012000	.001850	....	....	
13, 200	66, 000	.013750	.001750	....	....	
13, 600	68, 000	.015350	.001600	....	....	
14, 000	70, 000	.017050	.001700	....	....	
14, 400	72, 000	.019300	.002250	....	....	
14, 800	74, 000	.021600	.002300	....	....	
15, 200	76, 000	.024000	.002400	....	....	
15, 600	78, 000	.026300	.002300	....	....	
16, 000	80, 000	.029050	.002750	....	....	
16, 400	82, 000	.032550	.003500	....	....	
16, 800	84, 000	.036000	.003450	....	....	
17, 200	86, 000	.039500	.003500	....	....	
17, 600	88, 000	.043600	.004100	....	....	
18, 000	90, 000	.0500	.0064	....	....	
18, 400	92, 000	.0550	.0059	....	....	
18, 800	94, 000	.0600	.0050	....	....	
19, 200	96, 000	.0750	.0150	....	....	
19, 600	98, 000	.1050	.0300	....	....	
19, 680	98, 400	.1350	.0300	....	....	Tensile strengh.

General summary.

Tensile strength per square inch of original section	pounds..	98, 400
Elastic limit per square inch of original section	do...	51, 000
Elongation per inch after rupture	inch..	0. 2100
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	.095
Reduction in area after rupture, per centum of original section		34. 0
Position of rupture		1 inch from neck
Character of broken surface		silky, 40 per centum; granular, 60 per centum
Elongation of inch sectinos		″.18, ″.24*

No. 2712.

Marks, $^{32\,J_{11}}_{B\,T_5\,M}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	. 000100	. 000100	0.		
2, 000	10, 000	. 000300	. 000200	0.		
3, 000	15, 000	. 000450	. 000150	0.		
4, 000	20, 000	. 000650	. 000200	0.		
5, 000	25, 000	. 000850	. 000200	0.		
6, 000	30, 000	. 001050	. 000200	0.		
7, 000	35, 000	. 001200	. 000150	0.		
8, 000	40, 000	. 001400	. 000200	0.		
9, 000	45, 000	. 001550	. 000150			
10, 000	50, 000	. 001750	. 000200			Elastic limit.
10, 200	51, 000	. 002550	. 000800			
10, 400	52, 000	. 003700	. 001150			
10, 600	53, 000	. 004650	. 000950			
10, 800	54, 000	. 005550	. 000900			
11, 000	55, 000	. 006000	. 000450			
11, 200	56, 000	. 007000	. 001000			
11, 400	57, 000	. 007600	. 000600			
11, 600	58, 000	. 008200	. 000600			
11, 800	59, 000	. 008900	. 000700			
12, 000	60, 000	. 009600	. 000700			
12, 400	62, 000	. 011400	. 001800			
12, 800	64, 000	. 013100	. 001700			
13, 200	66, 000	. 014600	. 001500			
13, 600	68, 000	. 016250	. 001650			
14, 000	70, 000	. 018160	. 001850			
14, 400	72, 000	. 020100	. 002000			
14, 800	74, 000	. 022500	. 002600			
15, 200	76, 000	. 024800	. 002300			
15, 600	78, 000	. 027000	. 002200			
16, 000	80, 000	. 029750	. 002750			
16, 400	82, 000	. 033000	. 003250			
16, 800	84, 000	. 036000	. 003000			
17, 200	86, 000	. 039250	. 003250			
17, 600	88, 000	. 043500	. 004250			
18, 000	90, 000	. 048500	. 005000			
18, 400	92, 000	. 0550	. 0065			
18, 800	94, 000	. 0600	. 0050			
19, 200	96, 000	. 0750	. 0150			
19, 600	98, 000	. 0950	. 0200			
19, 760	98, 800	. 1300	. 0350			Tensile strength.

General summary.

Tensile strength per square inch of original section .... pounds..	98, 800
Elastic limit per square inch of original section .... do...	50, 000
Elongation per inch after rupture .... inch..	0. 2100
Elongation per inch under strain at elastic limit .... do ..	. 001750
Reduction in diameter at point of rupture .... do ..	. 125
Reduction in area after rupture, per centum of original section	43. 3
Position of rupture	".75 from neck
Character of broken surface	silky; trace of granulation
Elongation of inch sections	".30*, ".12

No. 676.

Marks, $\overset{32\ J\ U}{B\ T,\ M}$
Length, 4″.50.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000267	.000167	0.	....	
7,500	15,000	.000433	.000166	0.	....	
10,000	20,000	.000600	.000167	0.	....	
12,500	25,000	.000800	.000200	0.	....	
15,000	30,000	.000933	.000133	0.	....	
17,500	35,000	.001100	.000167	0.	....	
20,000	40,000	.001267	.000167	0.	....	
20,500	41,000	.001300	.000033	....	....	
21,000	42,000	.001300	0.	....	....	
21,500	43,000	.001333	.000033	....	....	
22,000	44,000	.001367	.000034	....	....	
22,500	45,000	.001400	.000033	....	....	
23,000	46,000	.001433	.000033	....	....	
23,500	47,000	.001467	.000034	....	....	
24,000	48,000	.001500	.000033	....	....	
24,500	49,000	.001500	0.	....	....	
25,000	50,000	.001533	.000033	....	....	
25,500	51,000	.001567	.000034	....	....	Elastic limit.
26,000	52,000	.002333	.000766	....	....	
26,500	53,000	.003233	.000900	....	....	
27,000	54,000	.003833	.000600	....	....	
27,500	55,000	.004500	.000667	....	....	
28,000	56,000	.005100	.000600	....	....	
49,100	98,200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	51,000
Compression per inch under stress at elastic limit	inch..	0.001567
Ultimate strength per square inch of original section	pounds..	98,200
Manner of failure		triple flexure

No. 2712.

Marks, $^{32\,J_{11}}_{B\,T_5\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000300	.000200	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000650	.000200	0.	....	
5, 000	25, 000	.000850	.000200	0.	....	
6, 000	30, 000	.001050	.000200	0.	....	
7, 000	35, 000	.001200	.000150	0.	....	
8, 000	40, 000	.001400	.000200	0.	....	
9, 000	45, 000	.001550	.000150	....	....	
10, 000	50, 000	.001750	.000200	....	....	Elastic limit.
10, 200	51, 000	.002550	.000800	....	....	
10, 400	52, 000	.003700	.001150	....	....	
10, 600	53, 000	.004650	.000950	....	....	
10, 800	54, 000	.005550	.000900	....	....	
11, 000	55, 000	.006000	.000450	....	....	
11, 200	56, 000	.007000	.001000	....	....	
11, 400	57, 000	.007600	.000600	....	....	
11, 600	58, 000	.008200	.000600	....	....	
11, 800	59, 000	.008900	.000700	....	....	
12, 000	60, 000	.009600	.000700	....	....	
12, 400	62, 000	.011400	.001800	....	....	
12, 800	64, 000	.013100	.001700	....	....	
13, 200	66, 000	.014600	.001500	....	....	
13, 600	68, 000	.016250	.001650	....	....	
14, 000	70, 000	.018100	.001850	....	....	
14, 400	72, 000	.020100	.002000	....	....	
14, 800	74, 000	.022500	.002600	....	....	
15, 200	76, 000	.024800	.002300	....	....	
15, 600	78, 000	.027000	.002200	....	....	
16, 000	80, 000	.029750	.002750	....	....	
16, 400	82, 000	.033000	.003250	....	....	
16, 800	84, 000	.036000	.003000	....	....	
17, 200	86, 000	.039250	.003250	....	....	
17, 600	88, 000	.043500	.004250	....	....	
18, 000	90, 000	.048500	.005000	....	....	
18, 400	92, 000	.0550	.0065	....	....	
18, 800	94, 000	.0600	.0050	....	....	
19, 200	96, 000	.0750	.0150	....	....	
19, 600	98, 000	.0950	.0200	....	....	
19, 760	98, 800	.1300	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98, 800
Elastic limit per square inch of original section	do...	50, 000
Elongation per inch after rupture	inch..	0. 2100
Elongation per inch under strain at elastic limit	do ..	.001750
Reduction in diameter at point of rupture	do ..	. 125
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		″.75 from neck
Character of broken surface		silky; trace of granulation
Elongation of inch sections		″.30*, ″.12

No. 676.

Marks, ${}^{32\ Ju}_{B\ T,\ M}$
Length, 4''.50.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000267	.000167	0.	....	
7,500	15,000	.000433	.000166	0.	....	
10,000	20,000	.000600	.000167	0.	....	
12,500	25,000	.000800	.000200	0.	....	
15,000	30,000	.000933	.000183	0.	....	
17,500	35,000	.001100	.000167	0.	....	
20,000	40,000	.001267	.000167	0.	....	
20,500	41,000	.001300	.000033	....	....	
21,000	42,000	.001300	0.	....	....	
21,500	43,000	.001333	.000033	....	....	
22,000	44,000	.001367	.000034	....	....	
22,500	45,000	.001400	.000033	....	....	
23,000	46,000	.001433	.000033	....	....	
23,500	47,000	.001467	.000034	....	....	
24,000	48,000	.001500	.000033	....	....	
24,500	49,000	.001500	0.	....	....	
25,000	50,000	.001533	.000033	....	....	
25,500	51,000	.001567	.000034	....	....	Elastic limit.
26,000	52,000	.002333	.000766	....	....	
26,500	53,000	.003233	.000900	....	....	
27,000	54,000	.003833	.000600	....	....	
27,500	55,000	.004500	.000667	....	....	
28,000	56,000	.005100	.000600	....	....	
49,100	98,200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	51,000
Compression per inch under stress at elastic limit	inch..	0.001567
Ultimate strength per square inch of original section	pounds..	98,200
Manner of failure		triple flexure

No. 2226.

Marks, $^{32\,J_{12}}_{B\,T_1\,M}$
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000850	.000200	0.	....	
6,000	30,000	.001000	.000150	0.	....	
7,000	35,000	.001200	.000200	0.	....	
8,000	40,000	.001350	.000150	0.	....	
9,000	45,000	.001550	.000200	....	....	
10,000	50,000	.001700	.000150	....	....	
10,200	51,000	.001750	.000050	....	....	
10,400	52,000	.001800	.000050	....	....	
10,600	53,000	.001900	.000100	....	....	
10,800	54,000	.001900	0.	....	....	
11,000	55,000	.001950	.000050	....	....	
11,200	56,000	.002000	.000050	....	....	Elastic limit.
11,400	57,000	.010300	.008300	....	....	
11,600	58,000	.011000	.000700	....	....	
11,800	59,000	.011700	.000700	....	....	
12,000	60,000	.012600	.000900	....	....	
12,400	62,000	.014150	.001550	....	....	
12,800	64,000	.016200	.002050	....	....	
13,200	66,000	.018250	.002050	....	....	
13,600	68,000	.020000	.001750	....	....	
14,000	70,000	.022250	.002250	....	....	
14,400	72,000	.024400	.002150	....	....	
14,800	74,000	.027000	.002600	....	....	
15,200	76,000	.029250	.002250	....	....	
15,600	78,000	.032250	.003000	....	....	
16,000	80,000	.035600	.003350	....	....	
16,400	82,000	.039000	.003400	....	....	
16,800	84,000	.043250	.004250	....	....	
17,200	86,000	.049000	.005750	....	....	
17,600	88,000	.055250	.006250	....	....	
18,000	90,000	.0650	.009750	....	....	
18,400	92,000	.0800	.0150	....	....	
18,800	94,000	.0950	.0150	....	....	
19,200	96,000	.1100	.0150	....	....	
19,300	96,500	.1750	.0150	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96,500
Elastic limit per square inch of original section	do....	56,000
Elongation per inch after rupture	inch..	0.2600
Elongation per inch under strain at elastic limit	do....	.002000
Reduction in diameter at point of rupture	do....	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		''.34*, ''.28

No. 2227.

Marks, $^{32\,\mathrm{J}_{12}}_{\mathrm{B\,T,\,M}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000350	.000200	0.	....	
3, 000	15, 000	.000550	.000200	0.	....	
4, 000	20, 000	.000700	.000150	0.	....	
5, 000	25, 000	.000900	.000200	.000050	.000050	
6, 000	30, 000	.001100	.000200	.000050	0.	
7, 000	35, 000	.001300	.000200	.000050	0.	
8, 000	40, 000	.001450	.000150	.000050	0.	
9, 000	45, 000	.001600	.000150	.000100	.000950	
10, 000	50, 000	.001750	.000150	.000100	0.	
10, 200	51, 000	.001750	0.	....	....	
10, 400	52, 000	.001800	.000050	....	....	
10, 600	53, 000	.001850	.000050	....	....	Elastic limit.
10, 800	54, 000	.002750	.000900	....	....	
11, 000	55, 000	.012800	.010050	....	....	
11, 200	56, 000	.013750	.000950	....	....	
11, 400	57, 000	.014750	.001000	....	....	
11, 600	58, 000	.015500	.000750	....	....	
11, 800	59, 000	.016100	.000600	....	....	
12, 000	60, 000	.017250	.001150	....	....	
12, 400	62, 000	.019700	.002450	....	....	
12, 800	64, 000	.022250	.002550	....	....	
13, 200	66, 000	.024250	.002000	....	....	
13, 600	68, 000	.027250	.003000	....	....	
14, 000	70, 000	.029500	.002250	....	....	
14, 400	72, 000	.032700	.003200	....	....	
14, 800	74, 000	.036500	.003800	....	....	
15, 200	76, 000	.040600	.004100	....	....	
15, 600	78, 000	.045600	.005000	....	....	
16, 000	80, 000	.052000	.006400	....	....	
16, 400	82, 000	.058750	.006750	....	....	
16, 800	84, 000	.0650	.006250	....	....	
17, 200	86, 000	.0800	.0150	....	....	
17, 600	88, 000	.1000	.0200	....	....	
18, 000	90, 000	.1500	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	90, 000
Elastic limit per square inch of original section	do....	53, 000
Elongation per inch after rupture	inch..	0. 2850
Elongation per inch under strain at elastic limit	do....	.001850
Reduction in diameter at point of rupture	do....	.155
Reduction in area after rupture, per centum of original section		51. 9
Position of rupture		1″.2 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.23, ″.34*

No. 618.

Marks, $\frac{32\,J_{12}}{B\,T_{3}\,M}$
Length, 4.″496.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000150	.000150	0.	....	
5, 000	10, 000	.000300	.000150	0.	....	
7, 500	15, 000	.000500	.000200	0.	....	
10, 000	20, 000	.000700	.000200	0.	....	
12, 500	25, 000	.000900	.000200	0.	....	
15, 000	30, 000	.001000	.000100	0.	....	
17, 500	35, 000	.001200	.000200	0.	....	
20, 000	40, 000	.001400	.000200	.000050	.000050	
22, 500	45, 000	.001550	.000150	.000050	0.	
23, 000	46, 000	.001550	0.	....	....	
23, 500	47, 000	.001600	.000050	....	....	
24, 000	48, 000	.001650	.000050	....	....	
24, 500	49, 000	.001700	.000050	....	....	
25, 000	50, 000	.001750	.000050	.000100	.000050	
25, 500	51, 000	.001800	.000050	....	....	
26, 000	52, 000	.001850	.000050	....	....	
26, 500	53, 000	.001900	.000050	....	....	
27, 000	54, 000	.001950	.000050	....	....	
27, 500	55, 000	.002000	.000050	.000250	.000150	Elastic limit.
28, 000	56, 000	.007050	.005050	....	....	
28, 500	57, 000	.007300	.000250	....	....	
29, 000	58, 000	.007800	.000500	....	....	
29, 500	59, 000	.008400	.000600	....	....	
30, 000	60, 000	.009050	.000650	....	....	
45, 800	91, 600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	55, 000
Compression per inch under stress at elastic limit	inch..	0. 002000
Ultimate strength per square inch of original section	pounds..	91, 600
Manner of failure		triple flexure

No. 2078.

Marks, $^{32\,J_{13}}_{B\,T,\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001050	.000150	0.	....	
8,000	40,000	.001250	.000200	0.	....	
9,000	45,000	.001400	.000150	0.	....	
9,200	46,000	.001450	.000050	....	....	
9,400	47,000	.001550	.000100	....	....	
9,600	48,000	.001600	.000050	....	....	
9,800	49,000	.001650	.000050	....	....	
10,000	50,000	.001750	.000100	.000050	.000050	Elastic limit.
10,200	51,000	.002100	.000350	....	....	
10,400	52,000	.002600	.000500	....	....	
10,600	53,000	.003100	.000500	....	....	
10,800	54,000	.003600	.000500	....	....	
11,000	55,000	.004150	.000550	....	....	
11,200	56,000	.004850	.000700	....	....	
11,400	57,000	.005850	.001000	....	....	
11,600	58,000	.006600	.000750	....	....	
11,800	59,000	.007650	.001050	....	....	
12,000	60,000	.008500	.000850	....	....	
12,400	62,000	.010250	.001750	....	....	
12,800	64,000	.012000	.001750	....	....	
13,200	66,000	.013950	.001950	....	....	
13,600	68,000	.015950	.002000	....	....	
14,000	70,000	.018000	.002150	....	....	
14,400	72,000	.020050	.002050	....	....	
14,800	74,000	.022850	.002800	....	....	
15,200	76,000	.025300	.002450	....	....	
15,600	78,000	.027800	.002500	....	....	
16,000	80,000	.030850	.003050	....	....	
16,400	82,000	.034000	.003150	....	....	
16,800	84,000	.037800	.003800	....	....	
17,200	86,000	.041600	.003800	....	....	
17,600	88,000	.046750	.003150	....	....	
18,000	90,000	.053000	.006250	....	....	
18,400	92,000	.060500	.007500	....	....	
18,800	94,000	.0800	.0195	....	....	
19,110	95,550	.1050	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	95,550
Elastic limit per square inch of original section	do	50,000
Elongation per inch after rupture	inch	0.1900
Elongation per inch under strain at elastic limit	do	.001750
Reduction in diameter at point of rupture	do	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		½ inch from middle of stem
Character of broken surface		silky center; granular at circumference
Elongation of inch sections		″.30*, ″.08

No. 2079.

Marks, $^{32\,J_{12}}_{B\,T_2\,M}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000050	.000050	0.	....	
2,000	10,000	.000150	.000100	0.	....	
3,000	15,000	.000250	.000100	0.	....	
4,000	20,000	.000350	.000100	0.	....	
5,000	25,000	.000550	.000200	0.	....	
6,000	30,000	.000700	.000150	0.	....	
7,000	35,000	.000850	.000150	0.	....	
8,000	40,000	.001050	.000200	0.	....	
9,000	45,000	.001250	.000200	0.	....	
9,200	46,000	.001300	.000050	....	....	
9,400	47,000	.001350	.000050	....	....	
9,600	48,000	.001400	.000050	....	....	
9,800	49,000	.001450	.000050	....	....	
10,000	50,000	.001550	.000100	.000050	.000050	
10,200	51,000	.001650	.000100	....	....	
10,400	52,000	.001700	.000050	....	....	Elastic limit.
10,600	53,000	.001850	.000150	....	....	
10,800	54,000	.002100	.000250	....	....	
11,000	55,000	.002550	.000450	....	....	
11,200	56,000	.003200	.000650	....	....	
11,400	57,000	.003800	.000600	....	....	
11,600	58,000	.004700	.000900	....	....	
11,800	59,000	.005600	.000900	....	....	
12,000	60,000	.006650	.001050	....	....	
12,400	62,000	.008150	.001500	....	....	
12,800	64,000	.010000	.001850	....	....	
13,200	66,000	.012100	.002100	....	....	
13,600	68,000	.014500	.002400	....	....	
14,000	70,000	.016250	.001750	....	....	
14,400	72,000	.018200	.001950	....	....	
14,800	74,000	.020850	.002650	....	....	
15,200	76,000	.023500	.002650	....	....	
15,600	78,000	.025600	.002100	....	....	
16,000	80,000	.028400	.002800	....	....	
16,400	82,000	.031600	.003200	....	....	
16,800	84,000	.034800	.003200	....	....	
17,200	86,000	.039000	.004200	....	....	
17,600	88,000	.043000	.004000	....	....	
18,000	90,000	.048250	.005250	....	....	
18,400	92,000	.054900	.006650	....	....	
18,800	94,000	.063500	.008600	....	....	
19,200	96,000	.0850	.0215	....	....	
19,510	97,550	.1150	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	97,550
Elastic limit per square inch of original section	do....	52,000
Elongation per inch after rupture	inch..	0.1900
Elongation per inch under strain at elastic limit	do....	.001700
Reduction in diameter at point of rupture	do ...	.105
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		⅛ inch from neck
Character of broken surface		granular; dull center
Elongation of inch sections		".26*, ".12

No. 609.

Marks, ${}^{32J_{13}}_{BT_3M}$
Length, 4″.496.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000550	.000150	0.	....	
12, 500	25, 000	.000700	.000150	0.	....	
15, 000	30, 000	.000850	.000150	0.	....	
17, 500	35, 000	.001050	.000200	0.	....	
20, 000	40, 000	.001250	.000200	0.	....	
22, 500	45, 000	.001450	.000200	0.	....	
23, 000	46, 000	.001500	.000050	....	....	
23, 500	47, 000	.001500	0.	....	....	
24, 000	48, 000	.001550	.000050	....	....	
24, 500	49, 000	.001600	.000050	....	....	
25, 000	50, 000	.001650	.000050	0.	....	
25, 500	51, 000	.001750	.000100	....	....	
26, 000	52, 000	.001800	.000050	....	....	
26, 500	53, 000	.001850	.000050	....	....	
27, 000	54, 000	.001900	.000050	....	....	Elastic limit.
27, 500	55, 000	.002000	.000100	.000200	.000200	
28, 000	56, 000	.002250	.000250	....	....	
28, 500	57, 000	.002400	.000150	....	....	
29, 000	58, 000	.002600	.000200	....	....	
29, 500	59, 000	.003000	.000400	....	....	
30, 000	60, 000	.003550	.000550	.001450	.001250	
30, 500	61, 000	.004250	.000700	....	....	
31, 000	62, 000	.004900	.000650	....	....	
31, 500	63, 000	.005550	.000650	....	....	
32, 000	64, 000	.006300	.000750	....	....	
32, 500	65, 000	.007150	.000850	.001750	.003300	
49, 900	99, 800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	54, 000
Compression per inch under stress at elastic limit	inch..	0. 001900
Ultimate strength per square inch of original section	pounds..	99, 800
Manner of failure		triple flexure

No. 2088.

Marks, $^{32\,J_{14}}_{B\,T_1\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000350	.000200	0.	....	
3, 000	15, 000	.000500	.000150	0.	....	
4, 000	20, 000	.000700	.000200	0.	....	
5, 000	25, 000	.000850	.000150	0.	....	
6, 000	30, 000	.001000	.000150	0.	....	
7, 000	35, 000	.001150	.000150	0.	....	
8, 000	40, 000	.001350	.000200	0.	....	
9, 000	45, 000	.001550	.000200	0.	....	
9, 200	46, 000	.001550	0.	....	....	
9, 400	47, 000	.001550	0.	....	....	
9, 600	48, 000	.001650	.000100	....	....	
9, 800	49, 000	.001650	0.	....	....	
10, 000	50, 000	.001700	.000050	0.	....	
10, 200	51, 000	.001700	0.	....	....	
10, 400	52, 000	.001750	.000050	....	....	
10, 600	53, 000	.001800	.000050	....	....	Elastic limit.
10, 800	54, 000	.007000	.005200	....	....	
11, 000	55, 000	.008000	.001000	....	....	
11, 200	56, 000	.009250	.001250	....	....	
11, 400	57, 000	.010050	.000800	....	....	
11, 600	58, 000	.010600	.000550	....	....	
11, 800	59, 000	.011350	.000750	....	....	
12, 000	60, 000	.012100	.000750	....	....	
12, 400	62, 000	.014050	.001950	....	....	
12, 800	64, 000	.016000	.001950	....	....	
13, 200	66, 000	.018000	.002000	....	....	
13, 600	68, 000	.020000	.002000	....	....	
14, 000	70, 000	.023000	.003000	....	....	
14, 400	72, 000	.025600	.002600	....	....	
14, 800	74, 000	.027850	.002250	....	....	
15, 200	76, 000	.031050	.003200	....	....	
15, 600	78, 000	.034250	.003200	....	....	
16, 000	80, 000	.038250	.004000	....	....	
16, 400	82, 000	.042500	.004250	....	....	
16, 800	84, 000	.047250	.004750	....	....	
17, 200	86, 000	.053500	.006250	....	....	
17, 600	88, 000	.061750	.008250	....	....	
18, 000	90, 000	.0700	.008250	....	....	
18, 400	92, 000	.0900	.0200	....	....	
18, 720	93, 600	.1200	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	93, 600
Elastic limit per square inch of original section	do....	53, 000
Elongation per inch after rupture	inch..	0. 2100
Elongation per inch under strain at elastic limit	do....	.001800
Reduction in diameter at point of rupture	do....	.125
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		″.35 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.32,* ″.10

No. 2089.

Marks, $\overset{32\ J_{14}}{B\ T_2\ M}$
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000550	.000250	0.	....	
4,000	20,000	.000700	.000150	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.001050	.000200	0.	....	
7,000	35,000	.001200	.000150	0.	....	
8,000	40,000	.001350	.000150	0.	....	
9,000	45,000	.001550	.000200	.000050	.000050	
9,200	46,000	.001550	0.	....	....	
9,400	47,000	.001600	.000050	....	....	
9,600	48,000	.001650	.000050	....	....	
9,800	49,000	.001700	.000050	....	....	
10,000	50,000	.001700	0.	.000050	0.	
10,200	51,000	.001750	.000050	....	....	
10,400	52,000	.001750	0.	....	....	
10,600	53,000	.001800	.000050	....	....	
10,800	54,000	.001850	.000050	....	....	Elastic limit.
11,000	55,000	.007500	.005650	....	....	
11,200	56,000	.008100	.000600	....	....	
11,400	57,000	.008900	.000800	....	....	
11,600	58,000	.010000	.001100	....	....	
11,800	59,000	.010500	.000500	....	....	
12,000	60,000	.011000	.000500	....	....	
12,400	62,000	.012400	.001400	....	....	
12,800	64,000	.014250	.001850	....	....	
13,200	66,000	.016050	.001800	....	....	
13,600	68,000	.018050	.002000	....	....	
14,000	70,000	.020600	.002550	....	....	
14,400	72,000	.022750	.002150	....	....	
14,800	74,000	.025600	.002850	....	....	
15,200	76,000	.028000	.002400	....	....	
15,600	78,000	.031500	.003500	....	....	
16,000	80,000	.035000	.003500	....	....	
16,400	82,000	.039000	.004000	....	....	
16,800	84,000	.043000	.004000	....	....	
17,200	86,000	.048500	.005500	....	....	
17,600	88,000	.054750	.006250	....	....	
18,000	90,000	.062250	.007500	....	....	
18,400	92,000	.0700	.007750	....	....	
18,800	94,000	.0900	.0200	....	....	
19,060	95,300	.1300	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section........pounds..	95,300
Elastic limit per square inch of original section........do....	54,000
Elongation per inch after rupture........inch..	0.2250
Elongation per inch under strain at elastic limit........do....	.001850
Reduction in diameter at point of rupture........do....	.115
Reduction in area after rupture, per centum of original section........	40.3
Position of rupture........	¼ inch from middle of stem
Character of broken surface........	silky; traces of granular metal
Elongation of inch sections........	''.31*, ''.14

No. 611.

Marks, $^{32\,J_{14}}_{B\,T_3\,M}$
Length, 4''.498.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000500	.000200	.000050	.000050	
10,000	20,000	.000650	.000150	.000050	0.	
12,500	25,000	.000800	.000150	.000050	0.	
15,000	30,000	.001000	.000200	.000050	0.	
17,500	35,000	.001150	.000150	.000100	.000050	
20,000	40,000	.001350	.000200	.000050	.000050	
20,500	41,000	.001350	0.	....	....	
21,000	42,000	.001400	.000050	....	....	
21,500	43,000	.001450	.000050	....	....	
22,000	44,000	.001500	.000050	....	....	
22,500	45,000	.001500	0.	.000100	.000050	
23,000	46,000	.001550	.000050	....	....	Elastic limit.
23,500	47,000	.001700	.000150	....	....	
24,000	48,000	.001750	.000050	....	....	
24,500	49,000	.001900	.000150	....	....	
25,000	50,000	.004400	.002500	....	....	
46,000	92,000	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section......pounds..	46,000
Compression per inch under stress at elastic limit......inch..	0.001550
Ultimate strength per square inch of original section......pounds..	92,000
Manner of failure......	triple flexure

No. 2228.

Marks, $\overset{32\ J,\ 15}{M\ T,\ M}$
Diameter ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000700	.000200	0.	....	
5,000	25,000	.000900	.000200	0.	....	
6,000	30,000	.001050	.000150	0.	....	
7,000	35,000	.001200	.000150	0.	....	
8,000	40,000	.001400	.000200	0.	....	
9,000	45,000	.001550	.000150	0.	....	
10,000	50,000	.001700	.000150	0.	....	
10,200	51,000	.001750	.000050	....	....	
10,400	52,000	.001800	.000050	....	....	
10,600	53,000	.001850	.000050	....	....	Elastic limit.
10,800	54,000	.002050	.000200	....	....	
11,000	55,000	.002300	.000250	....	....	
11,200	56,000	.003050	.000750	....	....	
11,400	57,000	.003750	.000700	....	....	
11,600	58,000	.004700	.000950	....	....	
11,800	59,000	.005500	.000800	....	....	
12,000	60,000	.006200	.000700	....	....	
12,400	62,000	.007750	.001550	....	....	
12,800	64,000	.009600	.001850	....	....	
13,200	66,000	.011000	.001400	....	....	
13,600	68,000	.012650	.001650	....	....	
14,000	70,000	.014550	.001900	....	....	
14,400	72,000	.016250	.001700	....	....	
14,800	74,000	.018100	.001850	....	....	
15,200	76,000	.020000	.001900	....	....	
15,600	78,000	.022050	.002050	....	....	
16,000	80,000	.024500	.002450	....	....	
16,400	82,000	.027500	.003000	....	....	
16,800	84,000	.030150	.002650	....	....	
17,200	86,000	.033250	.003100	....	....	
17,600	88,000	.036000	.002750	....	....	
18,000	90,000	.039700	.003700	....	....	
18,400	92,000	.045000	.005300	....	....	
18,800	94,000	.050750	.005750	....	....	
19,200	96,000	.0600	.009250	....	....	
19,600	98,000	.0650	.0050	....	....	
20,000	100,000	.0850	.0200	....	....	
20,310	101,550	.1200	.0350	....	....	Tensile strength.

General summary.

Specific gravity		7.8613
Tensile strength per square inch of original section	pounds	101,550
Elastic limit per square inch of original section	do	53,000
Elongation per inch after rupture	inch	0.2100
Elongation per inch under strain at elastic limit	do	.001850
Reduction in diameter at point of rupture	do	.105
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		″.1 from middle of stem
Character of broken surface		granular; dull center
Elongation of inch sections		″.27*, ″.15

No. 2229.

Marks, $\overset{32\ J_{14}}{M\ T_2\ M}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000500	.000250	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000850	.000200	0.	....	
6,000	30,000	.001000	.000150	0.	....	
7,000	35,000	.001150	.000150	0.	....	
8,000	40,000	.001350	.000200	.000050	.000050	
9,000	45,000	.001550	.000200	.000050	0.	
10,000	50,000	.001900	.000350	.000100	.000050	Elastic limit.
10,200	51,000	.002100	.000200	....	....	
10,400	52,000	.002550	.000450	....	....	
10,600	53,000	.003050	.000500	....	....	
10,800	54,000	.003750	.000700	....	....	
11,000	55,000	.004350	.000600	....	....	
11,200	56,000	.005150	.000800	....	....	
11,400	57,000	.005900	.000750	....	....	
11,600	58,000	.006600	.000700	....	....	
11,800	59,000	.007350	.000750	....	....	
12,000	60,000	.008150	.000800	....	....	
12,400	62,000	.009750	.001600	....	....	
12,800	64,000	.011000	.001250	....	....	
13,200	66,000	.012700	.001700	....	....	
13,600	68,000	.014350	.001650	....	....	
14,000	70,000	.016300	.001950	....	....	
14,400	72,000	.018100	,001800	....	....	
14,800	74,000	.019750	.001650	....	....	
15,200	76,000	.021500	.001750	....	....	
15,600	78,000	.024250	.002750	....	....	
16,000	80,000	.026250	.002000	....	....	
16,400	82,000	.029000	.002750	....	....	
16,800	84,000	.032000	.003000	....	....	
17,200	86,000	.035000	.003000	....	....	
17,600	88,000	.038250	.003250	....	....	
18,000	90,000	.042700	.004450	....	....	
18,400	92,000	.047000	.005200	....	....	
18,800	94,000	.055250	.007350	....	....	
19,200	96,000	.0600	.004750	....	....	
19,600	98,000	.0750	.0150	....	....	
20,000	100,000	.1050	.0300	....	....	
20,060	100,300	.1350	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	100,300
Elastic limit per square inch of original section	do....	50,000
Elongation per inch after rupture	inch..	0.2150
Elongation per inch under strain at elastic limit	do....	.001900
Reduction in diameter at point of rupture	do....	.104
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		″.1 from middle of stem
Character of broken surface		granular; dull center
Elongation of inch sections		″.29*, ″.14

No. 619.

Marks, $^{32}_{M}\,^{J_{14}}_{T_3}\,_{M}$
Length, 4″.502.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	emarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000400	.000100	0.	....	
10,000	20,000	.000550	.000150	0.	....	
12,500	25,000	.000800	.000250	.000050	.000050	
15,000	30,000	.000950	.000150	.000050	0.	
17,500	35,000	.001050	.000100	.000050	0.	
20,000	40,000	.001230	.000200	.000050	0.	
20,500	41,000	.001250	0.	....	....	
21,000	42,000	.001300	.000050	....	....	
21,500	43,000	.001350	.000050	....	....	
22,000	44,000	.001400	.000050	....	....	
22,500	45,000	.001450	.000050	.000050	0.	
23,000	46,000	.001500	.000050	....	....	
23,500	47,000	.001500	.000050	....	....	
24,000	48,000	.001550	0.	....	....	
24,500	49,000	.001600	.000050	....	....	
25,000	50,000	.001650	.000050	0.	.000050	Elastic limit.
25,500	51,000	.001750	.000100	....	....	
26,000	52,000	.002000	.000250	....	....	
26,500	53,000	.003000	.001000	....	....	
27,000	54,000	.004250	.001250	....	....	
27,500	55,000	.005550	.001300	.003500	.003500	
49,500	99,000	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds..	50,000
Compression per inch under stress at elastic limit ....inch..	0.001650
Ultimate strength per square inch of original section ....pounds..	99,000
Manner of failure	..triple flexure

No. 2280.

Marks, $\overset{32\ \text{J},}{\text{M T},}\text{'M}$
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000850	.000200	0.	....	
6,000	30,000	.001100	.000150	0.	....	
7,000	35,000	.001200	.000100	0.	....	
8,000	40,000	.001350	.000150	0.	....	
9,000	45,000	.001500	.000150	0.	....	
10,000	50,000	.001700	.000200	0.	....	
10,200	51,000	.001700	0.	....	....	
10,400	52,000	.001750	.000050	....	....	
10,600	53,000	.001800	.000050	....	....	
10,800	54,000	.001900	.000100	....	....	Elastic limit.
11,000	55,000	.002300	.000400	....	....	
11,200	56,000	.004000	.001700	....	....	
11,400	57,000	.005350	.001350	....	....	
11,600	58,000	.006250	.000900	....	....	
11,800	59,000	.007000	.000750	....	....	
12,000	60,000	.008000	.001000	....	....	
12,400	62,000	.009150	.001150	....	....	
12,800	64,000	.010600	.001450	....	....	
13,200	66,000	.012250	.001650	....	....	
13,600	68,000	.013900	.001650	....	....	
14,000	70,000	.015600	.001700	....	....	
14,400	72,000	.017300	.001700	....	....	
14,800	74,000	.019500	.002200	....	....	
15,200	76,000	.022000	.002500	....	....	
15,600	78,000	.023750	.001750	....	....	
16,000	80,000	.026000	.002250	....	....	
16,400	82,000	.028500	.002500	....	....	
16,800	84,000	.031000	.002500	....	....	
17,200	86,000	.034000	.003000	....	....	
17,600	88,000	.937500	.003500	....	....	
18,000	90,000	.042250	.004750	....	....	
18,400	92,000	.046000	.003750	....	....	
18,800	94,000	.052250	.006250	....	....	
19,200	96,000	.0600	.007750	....	....	
19,600	98,000	.0700	.0100	....	....	
20,000	100,000	.0950	.0250	....	....	
20,250	101,250	.1400	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	101,250
Elastic limit per square inch of original section	do....	54,000
Elongation per inch after rupture	inch..	0.1650
Elongation per inch under strain at elastic limit	do....	.001900
Reduction in diameter at point of rupture	do....	.065
Reduction in area after rupture, per centum of original section		23.9
Position of rupture		''.65 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		''.21*, ''.12

No. 2281.

Marks, $^{32\ J_{18}}_{M\ T_2\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000700	.000300	0.	....	
5, 000	25, 000	.000900	.000200	0.	....	
6, 000	30, 000	.001000	.000100	0.	....	
7, 000	35, 000	.001150	.000100	0.	....	
8, 000	40, 000	.001300	.000150	0.	....	
9, 000	45, 000	.001500	.000200	0.	....	
10, 000	50, 000	.001650	.000150	0.	....	
10, 200	51, 000	.001700	.000050	....	....	
10, 400	52, 000	.001800	.000100	....	....	
10, 600	53, 000	.001800	0.	....	....	
10, 800	54, 000	.001850	.000050	....	....	
11, 000	55, 000	.001900	.000050	....	....	
11, 200	56, 000	.002000	.000100	....	....	Elastic limit.
11, 400	57, 000	.007250	.005250	....	....	
11, 600	58, 000	.007750	.000500	....	....	
11, 800	59, 000	.008500	.000750	....	....	
12, 000	60, 000	.009250	.000750	....	....	
12, 400	62, 000	.011200	.001950	....	....	
12, 800	64, 000	.012250	.001050	....	....	
13, 200	66, 000	.014500	.002250	....	....	
13, 600	68, 000	.016500	.002000	....	....	
14, 000	70, 000	.018100	.001600	....	....	
14, 400	72, 000	.019600	.001500	....	....	
14, 800	74, 000	.021750	.002150	....	....	
15, 200	76, 000	.023600	.001850	....	....	
15, 600	78, 000	.026050	.002450	....	....	
16, 000	80, 000	.028700	.002650	....	....	
16, 400	82, 000	.031600	.002900	....	....	
16, 800	84, 000	.035000	.003400	....	....	
17, 200	86, 000	.038150	.003150	....	....	
17, 600	88, 000	.042750	.004600	....	....	
18, 000	90, 000	.047050	.004300	....	....	
18, 400	92, 000	.054000	.006950	....	....	
18, 800	94, 000	.0600	.0060	....	....	
19, 200	96, 000	.0700	.0100	....	....	
19, 600	98, 000	.0950	.0250	....	....	
19, 810	99, 050	.1450	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	99, 050
Elastic limit per square inch of original section	do....	56, 000
Elongation per inch after rupture	inch..	0. 2200
Elongation per inch under strain at elastic limit	do ...	.002000
Reduction in diameter at point of rupture	do....	.125
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		″.60 from neck
Character of broken surface		silky, in part interspersed with fine granulation
Elongation of inch sections		″.31*, ″.13

No. 636.

Marks, $\overset{32\ J_{1}}{M\ T_{2}\ M}$
Length, 4″.508.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000167	.000167	0.		
5, 000	10, 000	.000333	.000166	0.	....	
7, 500	15, 000	.000500	.000167	0.	....	
10, 000	20, 000	.000667	.000167	0.	....	
12, 500	25, 000	.000833	.000166	0.	....	
15, 000	30, 000	.001000	.000167	0.	....	
17, 500	35, 000	.001167	.000167	0.	....	
20, 000	40, 000	.001333	.000166	0.	....	
22, 500	45, 000	.001533	.000200	.000033	.000033	
25, 000	50, 000	.001700	.000167	.000033	0.	
25, 500	51, 000	.001733	.000033	....	....	
26, 000	52, 000	.001767	.000034	....	....	
26, 500	53, 000	.001800	.000033	....	....	
27, 000	54, 000	.001833	.000033	....	....	
27, 500	55, 000	.001900	.000067	.000067	.000034	
28, 000	56, 000	.001933	.000033	....	....	
28, 500	57, 000	.002000	.000667	....	....	Elastic limit.
29, 000	58, 000	.007800	.005800	....	....	
29, 500	59, 000	.009033	.001233	....	....	
30, 000	60, 000	.010033	.001000	....	....	
48, 010	96, 020	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section..pounds..	57, 000
Compression per inch under stress at elastic limit..inch..	0. 002000
Ultimate strength per square inch of original section................................pounds..	96, 020
Manner of failure..	triple flexure

No. 2080.

Marks, $^{32\,J_{17}}_{B\,T_1\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000550	.000250	0.	....	
4,000	20,000	.000700	.000150	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.001050	.000200	0.	....	
7,000	35,000	.001200	.000150	0.	....	
8,000	40,000	.001350	.000100	0.	....	
9,000	45,000	.001450	.000100	0.	....	
9,200	46,000	.001550	.000100	....	....	
9,400	47,000	.001650	.000100	....	....	
9,600	48,000	.001750	.000100	....	....	Elastic limit.
9,800	49,000	.002100	.000350	....	....	
10,000	50,000	.002600	.000700	....	....	
10,200	51,000	.003400	.000600	....	....	
10,400	52,000	.003900	.000500	....	....	
10,600	53,000	.004650	.000750	....	....	
10,800	54,000	.005300	.000650	....	....	
11,000	55,000	.006200	.000900	....	....	
11,200	56,000	.007050	.000850	....	....	
11,400	57,000	.008100	.001050	....	....	
11,600	58,000	.008700	.000600	....	....	
11,800	59,000	.009600	.000900	....	....	
12,000	60,000	.010300	.000700	....	....	
12,400	62,000	.012050	.001750	....	....	
12,800	64,000	.013900	.001850	....	....	
13,200	66,000	.015800	.001900	....	....	
13,600	68,000	.017850	.002050	....	....	
14,000	70,000	.020000	.002150	....	....	
14,400	72,000	.022400	.002400	....	....	
14,800	74,000	.024900	.002500	....	....	
15,200	76,000	.027500	.002600	....	....	
15,600	78,000	.031500	.004000	....	....	
16,000	80,000	.034500	.003000	....	....	
16,400	82,000	.038000	.003500	....	....	
16,800	84,000	.041600	.003600	....	....	
17,200	86,000	.046800	.005200	....	....	
17,600	88,000	.052000	.005200	....	....	
18,000	90,000	.060100	.008100	....	....	
18,400	92,000	.0750	.0149	....	....	
18,800	94,000	.0900	.0150	....	....	
19,120	95,600	.1300	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	95,600
Elastic limit per square inch of original section	do...	48,000
Elongation per inch after rupture	inch..	0.2100
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		″.40 from middle of stem
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.27*, ″.15

No. 2081.

Marks, $^{32\,J_{17}}_{B\,T_2\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	**Initial load.**
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001200	.000250	0.	....	
8,000	40,000	.001350	.000150	0.	....	
9,000	45,000	.001500	.000150	0.	....	
9,200	46,000	.001550	.000050	....	....	
9,400	47,000	.001600	.000050	....	....	
9,600	48,000	.001700	.000100	....	....	**Elastic limit.**
9,800	49,000	.002100	.000400	....	....	
10,000	50,000	.002650	.000550	....	....	
10,200	51,000	.003250	.000600	....	....	
10,400	52,000	.003950	.000700	....	....	
10,600	53,000	.004550	.000600	....	....	
10,800	54,000	.005200	.000650	....	....	
11,000	55,000	.006050	.000850	....	....	
11,200	56,000	.006750	.000700	....	....	
11,400	57,000	.007450	.000700	....	....	
11,600	58,000	.008250	.000800	....	....	
11,800	59,000	.009100	.000850	....	....	
12,000	60,000	.010000	.000900	....	....	
12,400	62,000	.011550	.001550	....	....	
12,800	64,000	.013250	.001700	....	....	
13,200	66,000	.015200	.001950	....	....	
13,600	68,000	.017100	.001900	....	....	
14,000	70,000	.019250	.002150	....	....	
14,400	72,000	.021500	.002250	....	....	
14,800	74,000	.023600	.002100	....	....	
15,200	76,000	.026350	.002750	....	....	
15,600	78,000	.028650	.002200	....	....	
16,000	80,000	.032300	.003650	....	....	
16,400	82,000	.036000	.003700	....	....	
16,800	84,000	.040250	.004250	....	....	
17,200	86,000	.044250	.004000	....	....	
17,600	88,000	.048500	.004250	....	....	
18,000	90,000	.055000	.006500	....	....	
18,400	92,000	.0650	.0100	....	....	
18,800	94,000	.0800	.0150	....	....	
19,200	96,000	.0950	.0150	....	....	
19,340	96,700	.1350	.0400	....	....	**Tensile strength.**

General summary.

Tensile strength per square inch of original section..................................pounds..	96,700
Elastic limit per square inch of original section..................................do...	48,000
Elongation per inch after rupture..................................inch..	0.2100
Elongation per inch under strain at elastic limit..................................do...	.001700
Reduction in diameter at point of rupture..................................do...	.115
Reduction in area after rupture, per centum of original section..................................	40.3
Position of rupture..................................	¼ inch from middle of stem
Character of broken surface..................................	silky; interspersed with fine granulation
Elongation of inch sections..................................	″.29*, ″.13

No. 610.

Marks, $^{32\,J_{17}}_{B\,T_1\,M}$
Length, 4''.502.
Diameter, ''.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000400	.000150	0.	....	
10,000	20,000	.000600	.000200	0.	....	
12,500	25,000	.000750	.000150	0.	....	
15,000	30,000	.000950	.000200	0.	....	
17,500	35,000	.001100	.000150	0.	....	
20,000	40,000	.001250	.000150	0.	....	
20,500	41,000	.001250	0.	....	....	
21,000	42,000	.001300	.000050	....	....	
21,500	43,000	.001300	0.	....	....	
22,000	44,000	.001350	.000050	....	....	
22,500	45,000	.001350	0.	— .000050	— .000050	
23,000	46,000	.001350	0.	....	....	
23,500	47,000	.001300	— .000050	....	....	Elastic limit.
24,000	48,000	.002000	.000700	....	....	
24,500	49,000	.002800	.000800	....	....	
25,000	50,000	.003500	.000700	.001800	.001850	
25,500	51,000	.004000	.000500	....	....	
26,000	52,000	.004750	.000750	....	....	
26,500	53,000	.005320	.000600	....	....	
27,000	54,000	.006100	.000750	....	....	
27,500	55,000	.006750	.000650	.004850	.003050	
44,800	89,600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section..pounds.. 47,000
Compression per inch under stress at elastic limit..inch.. 0.001300
Ultimate strength per square inch of original section..pounds.. 89,600
Manner of failure..triple flexure

[Additional specimens.]

No. 2545.

Marks, $\overset{32\ J_{17}}{M\ T_4\ M}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000850	.000100	0.	....	
7,000	35,000	.001000	.000150	0.	....	
8,000	40,000	.001150	.000150	0.	....	
9,000	45,000	.001350	.000200	....	....	
10,000	50,000	.001600	.000250	....	....	
10,200	51,000	.001760	.000100	....	....	
10,400	52,000	.001800	.000100	....	....	Elastic limit.
10,600	53,000	.002100	.000300	....	....	
10,800	54,000	.002300	.000200	....	....	
11,000	55,000	.002800	.000500	....	....	
11,200	56,000	.003100	.000300	....	....	
11,400	57,000	.003700	.000600	....	....	
11,600	58,000	.004050	.000350	....	....	
11,800	59,000	.004650	.006600	....	....	
12,000	60,000	.005500	.000850	....	....	
12,400	62,000	.006750	.001250	....	....	
12,800	64,000	.008200	.001450	....	....	
13,200	66,000	.009750	.001550	....	....	
13,600	68,000	.011600	.001850	....	....	
14,000	70,000	.013750	.002150	....	....	
14,400	72,000	.015300	.001550	....	....	
14,800	74,000	.017000	.001700	....	....	
15,200	76,000	.019050	.002050	....	....	
15,600	78,000	.020850	.001800	....	....	
16,000	80,000	.023200	.002350	....	....	
16,400	82,000	.025600	.002400	....	....	
16,800	84,000	.028250	.002650	....	....	
17,200	86,000	.031050	.002800	....	....	
17,600	88,000	.034300	.003250	....	....	
18,000	90,000	.037550	.003250	....	....	
18,400	92,000	.041750	.004200	....	....	
18,800	94,000	.047000	.005250	....	....	
19,200	96,000	.0550	.0080	....	....	
19,600	98,000	.0600	.0050	....	....	
20,000	100,000	.0700	.0100	....	....	
20,400	102,000	.0950	.0250	....	....	
20,480	102,400	.1050	.0100	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	102,400
Elastic limit per square inch of original section	do...	52,000
Elongation per inch after rupture	inch..	0.1800
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		".35 from neck
Character of broken surface		dull silky
Elongations of inch sections		".25*, ".11

No. 2546.

Marks, $\overset{32\ J_{17}}{M\ T_5 M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001150	.000200	0.	....	
8,000	40,000	.001300	.000150	0.	....	
9,000	45,000	.001500	.000200	....	....	
9,200	46,000	.001000	.000100	....	....	
9,400	47,000	.001650	.000050	....	....	
9,600	48,000	.001700	.000050	....	....	Elastic limit.
9,800	49,000	.002000	.000300	....	....	
10,000	50,000	.002700	.000700	....	....	
10,200	51,000	.004000	.001300	....	....	
10,400	52,000	.004450	.000450	....	....	
10,600	53,000	.004750	.000300	....	....	
10,800	54,000	.005650	.000900	....	....	
11,000	55,000	.006200	.000550	....	....	
11,200	56,000	.007000	.000800	....	....	
11,400	57,000	.007800	.000800	....	....	
11,600	58,000	.008600	.000800	....	....	
11,800	59,000	.009250	.000650	....	....	
12,000	60,000	.010150	.000900	....	....	
12,400	62,000	.012050	.001900	....	....	
12,800	64,000	.014700	.002650	....	....	
13,200	66,000	.016650	.001950	....	....	
13,600	68,000	.018550	.001900	....	....	
14,000	70,000	.020600	.002050	....	....	
14,400	72,000	.023100	.002500	....	....	
14,800	74,000	.026300	.003200	....	....	
15,200	76,000	.029000	.002700	....	....	
15,600	78,000	.031250	.002250	....	....	
16,000	80,000	.035000	.003750	....	....	
16,400	82,000	.039000	.004000	....	....	
16,800	84,000	.043500	.004500	....	....	
17,200	86,000	.048750	.005250	....	....	
17,600	88,000	.0550	.006250	....	....	
18,000	90,000	.0650	.0100	....	....	
18,400	92,000	.0800	.0150	....	....	
18,800	94,000	.1000	.0200	....	....	
18,900	94,500	.1300	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	94,500
Elastic limit per square inch of original section	do...	48,000
Elongation per inch after rupture	inch..	0.2250
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		″.85 from neck
Character of broken surface		dull silky
Elongation of inch sections		″.29*, ″.16

No. 658.

Marks, $\overset{32}{M}\overset{J}{T.}\overset{17}{M}$
Length, 4″.505.
Diameter, ″.798.
Sectional area, ″.50.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000067	.000067	—.000033	—.000033	
5,000	10,000	.000233	.000166	—.000033	0.	
7,500	15,000	.000367	.000134	—.000067	—.000034	
10,000	20,000	.000567	.000200	—.000067	0.	
12,500	25,000	.000733	.000166	—.000067	0.	
15,000	30,000	.000900	.000167	—.000067	0.	
17,500	35,000	.001067	.000967	....	....	
20,000	40,000	.001233	.000166	....	....	
22,500	45,000	.001400	.000167	....	....	
23,000	46,000	.001433	.000033	....	....	
23,500	47,000	.001500	.000067	....	....	
24,000	48,000	.001533	.000033	....	....	
24,500	49,000	.001567	.000034	....	....	Elastic limit.
25,000	50,000	.001667	.000100	....	....	
25,500	51,000	.001800	.000133	....	....	
26,000	52,000	.001967	.000167	....	....	
26,500	53,000	.002167	.000200	....	....	
27,000	54,000	.002333	.000166	....	....	
27,500	55,000	.002600	.000267	....	....	
28,000	56,000	.002867	.000367	....	....	
28,500	57,000	.003200	.000233	....	....	
29,000	58,000	.003700	.000500	....	....	
49,960	99,920	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	49,000
Compression per inch under stress at elastic limit	inch..	0.001567
Ultimate strength per square inch of original section	pounds..	99,920
Manner of failure		triple flexure

No. 2076.

Marks, $^{32\,J_{18}}_{B\,T,\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000900	.000250	0.	....	
6,000	30,000	.001050	.000150	0.	....	
7,000	35,000	.001200	.000150	0.	....	
8,000	40,000	.001350	.000150	0.	....	
9,000	45,000	.001500	.000150	0.	....	Elastic limit.
9,200	46,000	.001700	.000200	....	....	
9,400	47,000	.001900	.000200	....	....	
9,600	48,000	.002400	.000500	....	....	
9,800	49,000	.003100	.000700	....	....	
10,000	50,000	.003750	.000650	....	....	
10,200	51,000	.004550	.000800	....	....	
10,400	52,000	.005150	.000600	....	....	
10,600	53,000	.006050	.000900	....	....	
10,800	54,000	.006600	.000550	....	....	
11,000	55,000	.007450	.000850	....	....	
11,200	56,000	.008200	.000750	....	....	
11,400	57,000	.009100	.000900	....	....	
11,600	58,000	.009900	.000800	....	....	
11,800	59,000	.010600	.000700	....	....	
12,000	60,000	.011550	.000950	....	....	
12,400	62,000	.013200	.001650	....	....	
12,800	64,000	.015500	.002300	....	....	
13,200	66,000	.017350	.001750	....	....	
13,600	68,000	.019000	.001650	....	....	
14,000	70,000	.021550	.002550	....	....	
14,400	72,000	.024000	.002450	....	....	
14,800	74,000	.026250	.002250	....	....	
15,200	76,000	.028750	.002500	....	....	
15,600	78,000	.031750	.003000	....	....	
16,000	80,000	.035000	.003250	....	....	
16,400	82,000	.039600	.004600	....	....	
16,800	84,000	.044000	.004400	....	....	
17,200	86,000	.049250	.005250	....	....	
17,600	88,000	.055750	.006500	....	....	
18,000	90,000	.0650	.009250	....	....	
18,400	92,000	.0850	.0200	....	....	
18,800	94,000	.1050	.0200	....	....	
18,890	94,450	.1350	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	94,450
Elastic limit per square inch of original section	do...	45,000
Elongation per inch after rupture	inch..	0.2050
Elongation per inch under strain at elastic limit	do...	.001500
Reduction in diameter at point of rupture	do...	.105
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		½ inch from middle of stem
Character of broken surface		granular, 60 per centum; silky, 40 per centum
Elongation of inch sections		″.28*..″.13

No. 2077.

Marks, $\overset{32\,J_{18}}{B\,T,\,M}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000500	.000150	0.	....	
5,000	25,000	.000700	.000200	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001000	.000150	0.	....	
8,000	40,000	.001150	.000150	0.	....	
9,000	45,000	.001450	.000300	.000150	.000150	
9,200	46,000	.001450	0.	....	....	Elastic limit.
9,400	47,000	.001700	.000250	....	....	
9,600	48,000	.001800	.000100	....	....	
9,800	49,000	.002050	.000250	....	....	
10,000	50,000	.002700	.000650	.000900	.000750	
10,200	51,000	.003200	.000500	....	....	
10,400	52,000	.003950	.000750	....	....	
10,600	53,000	.004600	.000650	....	....	
10,800	54,000	.005500	.000900	....	....	
11,000	55,000	.006150	.000650	....	....	
11,200	56,000	.006900	.000750	....	....	
11,400	57,000	.007700	.000800	....	....	
11,600	58,000	.008450	.000750	....	....	
11,800	59,000	.009250	.000800	....	....	
12,000	60,000	.010000	.000750	....	....	
12,400	62,000	.011250	.001250	....	....	
12,800	64,000	.013650	.002400	....	....	
13,200	66,000	.015900	.002250	....	....	
13,600	68,000	.017150	.001250	....	....	
14,000	70,000	.019150	.002000	....	....	
14,400	72,000	.021300	.002150	....	....	
14,800	74,000	.024050	.002750	....	....	
15,200	76,000	.026200	.002150	....	....	
15,600	78,000	.029050	.002850	....	....	
16,000	80,000	.032400	.003350	....	....	
16,400	82,000	.035650	.003250	....	....	
16,800	84,000	.039250	.003600	....	....	
17,200	86,000	.043550	.004300	....	....	
17,600	88,000	.048400	.004850	....	....	
18,000	90,000	.054500	.006100	....	....	
18,400	92,000	.061900	.007400	....	....	
18,800	94,000	.0850	.0231	....	....	
19,200	96,000	.1000	.0150	....	....	
19,360	96,800	.1350	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96,800
Elastic limit per square inch of original section	do...	46,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do...	.001450
Reduction in diameter at point of rupture	do...	.105
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		".55 from neck
Character of broken surface		granular, 50 per centum; silky, 50 per centum
Elongation of inch sections		".28, ".12

No. 608.

Marks, $\frac{32\,\text{J}_{,8}}{\text{B}\,\text{T}_{,}\text{M}}$
Length, 4.″
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000550	.000150	0.	....	
12, 500	25, 000	.000700	.000150	0.	....	
15, 000	30, 000	.000850	.000150	0.	....	
17, 500	35, 000	.001050	.000200	0.	....	
20, 000	40, 000	.001250	.000200	0.	....	
20, 500	41, 000	.001300	.000050	....	....	
21, 000	42, 000	.001350	.000050	....	....	
21, 500	43, 000	.001350	0.	....	....	
22, 000	44, 000	.001400	.000050	....	....	
22, 500	45, 000	.001500	.000100	0.	....	
23, 000	46, 000	.001550	.000050	....	....	Elastic limit.
23, 500	47, 000	.001750	.000200	....	....	
24, 000	48, 000	.002000	.000250	....	....	
24, 500	49, 000	.002500	.000500	....	....	
25, 000	50, 000	.003000	.000500	.001500	.001500	
25, 500	51, 000	.003500	.000500	....	....	
26, 000	52, 000	.003850	.000350	....	....	
26, 500	53, 000	.004250	.000400	....	....	
27, 000	54, 000	.004750	.000500	....	....	
27, 500	55, 000	.005200	.000450	.003450	.001950	
52, 200	104, 400	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	46, 000
Compression per inch under stress at elastic limit	inch..	0. 001550
Ultimate strength per square inch of original section	pounds..	104, 400
Manner of failure		triple flexure

[Additional specimens.]

No. 2521.

Marks, $\overset{32\,J_{18}}{M\,T_4\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000850	.000100	0.	....	
7,000	35,000	.001150	.000300	0.	....	
8,000	40,000	.001300	.000150	0.	....	
9,000	45,000	.001450	.000150	....	....	
9,200	46,000	.001500	.000050	....	....	
9,400	47,000	.001500	0.	....	....	
9,000	48,000	.001550	.000050	....	....	
0,800	49,000	.001600	.000050	....	....	Elastic limit.
10,000	50,000	.001900	.000300	....	....	
10,200	51,000	.002500	.000600	....	....	
10,400	52,000	.002800	.000300	....	....	
10,600	53,000	.003200	.000400	....	....	
10,800	54,000	.003700	.000500	....	....	
11,000	55,000	.004450	.000750	....	....	
11,200	56,000	.005000	.000550	....	....	
11,400	57,000	.005850	.000850	....	....	
11,600	58,000	.006500	.000650	....	....	
11,800	59,000	.007250	.000750	....	....	
12,000	60,000	.008400	.001150	....	....	
12,400	62,000	.009700	.001300	....	....	
12,800	64,000	.011350	.001650	....	....	
13,200	66,000	.013250	.001900	....	....	
13,600	68,000	.014750	.001500	....	....	
14,000	70,000	.017000	.002250	....	....	
14,400	72,000	.019000	.002000	....	....	
14,800	74,000	.021050	.002050	....	....	
15,200	76,000	.023000	.001950	....	....	
15,600	78,000	.025600	.002600	....	....	
16,000	80,000	.028050	.002450	....	....	
16,400	82,000	.031100	.003050	....	....	
16,800	84,500	.034000	.029000	....	....	
17,200	86,000	.038000	.004000	....	....	
17,600	88,000	.042000	.004000	....	....	
18,000	90,000	.0450	.0030	....	....	
18,400	92,000	.0550	.0100	....	....	
18,800	94,000	.0650	.0100	....	....	
19,200	96,000	.0800	.0150	....	....	
19,600	98,000	.1000	.0200	....	....	
19,740	98,700	.1150	.0150	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98,700
Elastic limit per square inch of original section	do...	49,000
Elongation per inch after rupture	inch..	0.1550
Elongation per inch under strain at elastic limit	do...	.001600
Reduction in diameter at point of rupture	do...	.065
Reduction in area after rupture, per centum of original section		23.9
Position of rupture		½ inch from neck
Character of broken surface		granular, 60 per centum; silky, 40 per centum
Elongation of inch sections		″.21*, ″.10

No. 2522.

Marks, $\overset{32\ J_{18}}{M\ T_{8}M}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000350	.000200	0.	....	
3, 000	15, 000	.000500	.000150	0.	....	
4, 000	20, 000	.000650	.000150	0.	....	
5, 000	25, 000	.000850	.000200	0.	....	
6, 000	30, 000	.001050	.000200	0.	....	
7, 000	35, 000	.001200	.000150	0.	....	
8, 000	40, 000	.001350	.000150	0.	....	
9, 000	45, 000	.001550	.000200	....	....	
9, 200	46, 000	.001600	.000050	....	....	
9, 400	47, 000	.001600	0.	....	....	
9, 600	48, 000	.001650	.000050	....	....	
9, 800	49, 000	.001800	.000150	....	....	Elastic limit.
10, 000	50, 000	.002000	.000200	....	....	
10, 200	51, 000	.002250	.000250	....	....	
10, 400	52, 000	.002500	.000250	....	....	
10, 600	53, 000	.003200	.000700	....	....	
10, 800	54, 000	.003550	.000350	....	....	
11, 000	55, 000	.003850	.000300	....	....	
11, 200	56, 000	.004550	.000700	....	....	
11, 400	57, 000	.005400	.000850	....	....	
11, 600	58, 000	.006050	.000650	....	....	
11, 800	59, 000	.006550	.000500	....	....	
12, 000	60, 000	.007400	.000850	....	....	
12, 400	62, 000	.009300	.001900	....	....	
12, 800	64, 000	.010650	.001350	....	....	
13, 200	66, 000	.012600	.001950	....	....	
13, 600	68, 000	014250	.001650	....	....	
14, 000	70, 000	.016500	.002250	....	....	
14, 400	72, 000	.018550	.002050	....	....	
14, 800	74, 000	.020600	.002050	....	....	
15, 200	76, 000	.022600	.002000	....	....	
15, 600	78, 000	.025000	.002400	....	....	
16, 000	80, 000	.027250	.002250	....	....	
16, 400	82, 000	.029750	.002500	....	....	
16, 800	84, 000	.033100	.003350	....	....	
17, 200	86, 000	.036500	.003400	....	....	
17, 600	88, 000	.040000	.003500	....	....	
18, 000	90, 000	.046000	.006000	....	....	
18, 400	92, 000	.0500	.0040	....	....	
18, 800	94, 000	.0550	.0050	....	....	
19, 200	96, 000	.0600	.0050	....	....	
19, 600	98, 000	.0700	.0100	....	....	
20, 000	100, 000	.0950	.0250	....	....	
20, 080	100, 400	.1200	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	100, 400
Elastic limit per square inch of original section ....do...	49, 000
Elongation per inch after rupture ....inch..	0. 2000
Elongation per inch under strain at elastic limit..do...	.001800
Reduction in diameter at point of rupture..do...	.105
Reduction in area after rupture, per centum of original section	57. 1
Position of rupture..	1 inch from neck
Character of broken surface..	silky, with traces of granulation
Elongation of inch sections..	".13, ".27*

No. 650.

Marks, $\frac{32\ J_{18}}{M\ T_6\ M}$
Length, 4''.505.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000267	.000167	0.	....	
7,500	15,000	.000433	.000166	0.	....	
10,000	20,000	.000600	.000167	0.	....	
12,500	25,000	.000800	.000200	0.	....	
15,000	30,000	.000967	.000167	0.	....	
17,500	35,000	.001133	.000166	0.	....	
20,000	40,000	.001300	.000167	.000033	.000033	
20,500	41,000	.001333	.000033	....	....	
21,000	42,000	.001400	.000067	....	....	
21,500	43,000	.001433	.000033	....	....	
22,000	44,000	.001467	.000034	....	....	
22,500	45,000	.001533	.000066	....	....	
23,000	46,000	.001567	.000034	....	....	
23,500	47,000	.001600	.000033	....	....	
24,000	48,000	.001667	.000067	....	....	
24,500	49,000	.001700	.000033	....	....	
25,000	50,000	.001767	.000067	....	....	
25,500	51,000	.001867	.000100	....	....	Elastic limit.
26,000	52,000	.002033	.000166	....	....	
26,500	53,000	.002167	.000134	....	....	
27,000	54,000	.002333	.000166	....	....	
27,500	55,000	.002633	.000300	....	....	
28,000	56,000	.002833	.000200	....	....	
28,500	57,000	.003267	.000434	....	....	
29,000	58,000	.004067	.000800	....	....	
51,320	102,640	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	51,000
Compression per inch under stress at elastic limit	inch..	0.001867
Ultimate strength per square inch of original section	pounds..	102,640
Manner of failure		triple flexure

No. 2099.

Marks, $^{32\ J\ 9}_{B\ T,\ M}$
Diameter, ″.505.
Sectional area, 20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.		0.	0.	Initial load.
1, 000	5, 000	. 000100	0. 000100	0.		
2, 000	10, 000	. 000200	. 000100	0.		
3, 000	15, 000	. 000300	. 000100	0.		
4, 000	20, 000	. 000450	. 000150	0.		
5, 000	25, 000	. 000600	. 000150	0.		
6, 000	80, 000	. 000800	. 000200	0.		
7, 000	35, 000	. 000950	. 000150	0.		
8, 000	40, 000	. 001150	. 000200	— . 000050	— . 000050	
9, 000	45, 000	. 001300	. 000150	— . 000050	0.	
9, 200	46, 000	. 001300	0.			
9, 400	47, 000	. 001350	. 000050			
9, 600	48, 000	. 001400	. 000050			
9, 800	49, 000	. 001400	0.			
10, 000	50, 000	. 001450	. 000050	— . 000050	0.	
10, 200	51, 000	. 001500	. 000050			
10, 400	52, 000	. 001500	0.			
10, 600	53, 000	. 001550	. 000050			
10, 800	54, 000	. 001600	. 000050			
11, 000	55, 000	. 001650	. 000050	— . 000050	0.	
11, 200	56, 000	. 001700	. 000050			
11, 400	57, 000	. 001750	. 000050			
11, 600	58, 000	. 001750	0.			
11, 800	59, 000	. 001800	. 000050			
12, 000	60, 000	. 001800	0.	— . 000050	0.	
12, 200	61, 000	. 001850	. 000050			
12, 400	62, 000	. 001850	0.			
12, 600	63, 000	. 001900	. 000050			Elastic limit.
12, 800	64, 000	. 002050	. 000150			
13, 000	65, 000	. 002150	. 000100			
13, 200	66, 000	. 002800	. 000650			
13, 400	67, 000	. 003800	. 001000			
13, 600	68, 000	. 004350	. 000550			
13, 800	69, 000	. 005000	. 000650			
14, 000	70, 000	. 005600	. 000600			
14, 400	72, 000	. 007400	. 001800			
14, 800	74, 000	. 008600	. 001200			
15, 200	76, 000	. 010150	. 001550			
15, 600	78, 000	. 011750	. 001600			
16, 000	80, 000	. 013600	. 001850			
16, 400	82, 000	. 015600	. 002000			
16, 800	84, 000	. 017600	. 002000			
17, 200	86, 000	. 019350	. 001750			
17, 600	88, 000	. 021650	. 002300			
18, 000	90, 000	. 024550	. 002900			
18, 400	92, 000	. 026850	. 002300			
18, 800	94, 000	. 029500	. 002650			
19, 200	96, 000	. 032900	. 003400			
19, 600	98, 000	. 036500	. 003600			
20, 000	100, 000	. 040000	. 003500			
20, 400	102, 000	. 044750	. 004750			
20, 800	104, 000	. 0500	. 005250			
21, 200	106, 000	. 0600	. 0100			
21, 600	108, 000	. 0650	. 0050			
21, 960	109, 800	. 1050	. 0400			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	109, 800
Elastic limit per square inch of original section	do	63, 000
Elongation per inch after rupture	inch	0. 1850
Elongation per inch under strain at elastic limit	do	. 001900
Reduction in diameter at point of rupture	do	. 115
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		″.05 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.22*, ″.15

No. 2091.

Marks, $\begin{matrix}32\ J_{19}\\ B\ T,\ M\end{matrix}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000350	.000150	0.	....	
4, 000	20, 000	.000550	.000200	0.	....	
5, 000	25, 000	.000700	.000150	0.	....	
6, 000	30, 000	.000800	.000100	0.	....	
7, 000	35, 000	.001000	.000200	0.	....	
8, 000	40, 000	.001200	.000200	0.	....	
9, 000	45, 000	.001350	.000150	0.	....	
10, 000	50, 000	.001550	.000200	0.	....	
11, 000	55, 000	.001700	.000150	....	....	
11, 200	56, 000	.001700	0.	....	....	
11, 400	57. 000	.001750	.000050	....	....	
11, 600	58, 000	.001750	0.	....	....	Elastic limit.
11, 800	59, 000	.006400	.004650	....	....	
12, 000	60, 000	.007200	.000800	....	....	
12, 400	62, 000	.008550	.001350	....	....	
12, 800	64, 000	.010200	.001650	....	....	
13, 200	66, 000	.011750	.001550	....	....	
13, 600	68, 000	.013600	.001850	....	....	
14, 000	70, 000	.015350	.001750	....	....	
14, 400	72, 000	.017050	.002300	....	....	
14, 800	74, 000	.020000	.002350	....	....	
15, 200	76, 000	.022500	.002500	....	....	
15, 600	78, 000	.024750	.002250	....	....	
16, 000	80, 000	.027500	.002750	....	....	
16, 400	82, 000	.030300	.002800	....	....	
16, 800	84, 000	.033250	.002950	....	....	
17, 200	86, 000	.037500	.004250	....	....	
17, 600	88, 000	.041000	.003500	....	....	
18, 000	90, 000	.045600	.004600	....	....	
18, 400	92, 000	.051000	.005600	....	....	
18, 800	94, 000	.0600	.0090	....	....	
19, 200	96, 000	.0800	.0200	....	....	
19, 600	98, 000	.0900	.0100	....	....	
19, 980	99, 900	.1200	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................pounds..	99, 900
Elastic limit per square inch of original section ....do...	58, 000
Elongation per inch after rupture....................inch..	0. 2100
Elongation per inch under strain at elastic limit ....do...	.001750
Reduction in diameter at point of rupture....................do...	.135
Reduction in area after rupture, per centum of original section	46, 2
Position of rupture....................	½ inch from middle of stem
Character of broken surface....................	silky
Elongation of inch sections	″.29*, ″.13

No. 612.

Marks, $\overset{32\ J_{19}}{B\ T_3\ M}$
Length, 4''.495.
Diameter, ''.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000450	.000150	0.	....	
10,000	20,000	.000600	.000150	0.	....	
12,500	25,000	.000750	.000150	0.	....	
15,000	30,000	.000850	.000100	0.	....	
17,500	35,000	.001000	.000150	0.	....	
20,000	40,000	.001150	.000150	0.	....	
22,500	45,000	.001350	.000200	0.	....	
23,000	46,000	.001350	0.	....	....	
23,500	47,000	.001400	.000050	....	....	
24,000	48,000	.001450	.000050	....	....	
24,500	49,000	.001500	.000050	....	....	
25,000	50,000	.001500	0.	—.000050	—.000050	
25,500	51,000	.001500	0.	....	....	
26,000	52,000	.001550	.000050	....	....	
26,500	53,000	.001600	.000050	....	....	
27,000	54,000	.001600	0.	....	....	Elastic limit.
27,500	55,000	.003550	.001850	.002450	.002500	
28,000	56,000	.004900	.001350	....	....	
28,500	57,000	.005500	.000600	....	....	
29,000	58,000	.006250	.000750	....	....	
29,500	59,000	.007000	.000750	....	....	
30,000	60,000	.007500	.000500	.005350	.002900	
49,900	99,800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	54,000
Compression per inch under stress at elastic limit	inch..	0.001600
Ultimate strength per square inch of original section	pounds..	99,800
Manner of failure		triple flexure

No. 2252.

Marks, $^{32\,\mathrm{J}_{10}}_{\mathrm{M\,T_1\,M}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000500	.000100	0.	....	
5,000	25,000	.000700	.000200	0.	....	
6,000	30,000	.000900	.000200	0.	....	
7,000	35,000	.001100	.000200	0.	....	
8,000	40,000	.001350	.000250	0.	....	
9,000	45,000	.001450	.000100	0.	....	
10,000	50,000	.001550	.000100	0.	....	
10,200	51,000	.001600	.000050	....	....	
10,400	52,000	.001650	.000050	....	....	Elastic limit.
10,600	53,000	.012000	.010350	....	....	
10,800	54,000	.012800	.000800	....	....	
11,000	55,000	.013500	.000700	....	....	
11,200	56,000	.014450	.000950	....	....	
11,400	57,000	.015000	.000550	....	....	
11,600	58,000	.016000	.001000	....	....	
11,800	59,000	.017250	.001250	....	....	
12,000	60,000	.018250	.001000	....	....	
12,400	62,000	.021000	.002750	....	....	
12,800	64,000	.023400	.002400	....	....	
13,200	66,000	.025800	.002400	....	....	
13,600	68,000	.029000	.003200	....	....	
14,000	70,000	.032000	.003000	....	....	
14,400	72,000	.035500	.003500	....	....	
14,800	74,000	.039650	.004150	....	....	
15,200	76,000	.042500	.002850	....	....	
15,600	78,000	.053000	.010500	....	....	
16,000	80,000	.059000	.006000	....	....	
16,400	82,000	.0700	.0110	....	....	
16,800	84,000	.0800	.0100	....	....	
17,200	86,000	.0950	.0150	....	....	
17,600	88,000	.1200	.0250	....	....	
17,700	88,500	.1500	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	88,500
Elastic limit per square inch of original section	do...	52,000
Elongation per inch after rupture	inch..	0.2450
Elongation per inch under strain at elastic limit	do...	.001650
Reduction in diameter at point of rupture	do...	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		1″ from neck
Character of broken surface		silky
Elongation of inch sections		″.16, ′.33″

No. 2253.

Marks, $\frac{32\ J_{20}}{M\ T_2\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000650	.000100	0.	....	
6,000	30,000	.000850	.000200	0.	....	
7,000	35,000	.001000	.000150	0.	....	
8,000	40,000	.001200	.000200	0.	....	
9,000	45,000	.001450	.000250	.000050	.000050	
9,200	46,000	.001500	.000050	....	....	
9,400	47,000	.001550	.000050	....	....	
9,600	48,000	.001650	.000100	....	....	
9,800	49,000	.001700	.000050	....	....	
10,000	50,000	.001750	.000050	.000100	.000050	
10,200	51,000	.001800	.000050	....	....	
10,400	52,000	.001850	.000050	....	....	
10,600	53,000	.001900	.000050	....	....	
10,800	54,000	.001950	.000050	....	....	
11,000	55,000	.002000	.000050	....	....	
11,200	56,000	.002050	.000050	....	....	
11,400	57,000	.002100	.000050	....	....	Elastic limit.
11,600	58,000	.006250	.004150	....	....	
11,800	59,000	.017000	.010750	....	....	
12,000	60,000	.017750	.000750	....	....	
12,400	62,000	.019400	.001650	....	....	
12,800	64,000	.022250	.002850	....	....	
13,200	66,000	.024600	.002350	....	....	
13,600	68,000	.027100	.002500	....	....	
14,000	70,000	.030500	.003400	....	....	
14,400	72,000	.033550	.003050	....	....	
14,800	74,000	.037400	.003850	....	....	
15,200	76,000	.041850	.004450	....	....	
15,600	78,000	.047250	.005400	....	....	
16,000	80,000	.053350	.006100	....	....	
16,400	82,000	.061000	.007650	....	....	
16,800	84,000	.0700	.0090	....	....	
17,200	86,000	.0850	.0150	....	....	
17,600	88,000	.1000	.0150	....	....	
17,920	89,600	.1600	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	89,600
Elastic limit per square inch of original section	do...	57,000
Elongation per inch after rupture	inch..	0.1700
Elongation per inch under strain at elastic limit	do...	.002100
Reduction in diameter at point of rupture	do...	.075
Reduction in area after rupture, per centum of original section		27.4
Position of rupture		″.90 from neck
Character of broken surface		silky
Elongation of inch sections		″.22*, ″.122

No. 628.

Marks, $\genfrac{}{}{0pt}{}{32\ J_{20}}{M\ T_{3}\ M}$
Length, 4″.505.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000233	.000133	0.	....	
7, 500	15, 000	.000406	.000107	0.	....	
10, 000	20, 000	.000533	.000133	0.	....	
12, 500	25, 000	.000700	.000167	0.	....	
15, 000	30, 000	.000833	.000133	0.	....	
17, 500	35, 000	.000933	.000100	0.	....	
20, 000	40, 000	.001167	.000234	0.	....	
22, 500	45, 000	.001333	.000166	0.	....	
23, 000	46, 000	.001333	0.	....	....	
23, 500	47, 000	.001367	.000034	....	....	
24, 000	48, 000	.001400	.000033	....	....	
24, 500	49, 000	.001433	.000033	....	....	
25, 000	50, 000	.001467	.000034	.000033	.000033	Elastic limit.
25, 500	51, 000	.001667	.000200	....	....	
26, 000	52, 000	.009333	.007666	....	....	
26, 500	53, 000	.009933	.000600	....	....	
27, 000	54, 000	.010333	.000400	....	....	
45, 500	91, 000	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	50, 000
Compression per inch under stress at elastic limit	inch..	0. 001467
Ultimate strength per square inch of original section	pounds..	91, 000
Manner of failure		triple flexure

No. 2194.

Marks, $\substack{32\,J_2\\ B\,T_1\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000350	.000150	0.	....	
4, 000	20, 000	.000500	.000150	0.	....	
5, 000	25, 000	.000600	.000100	0.	....	
6, 000	30, 000	.000850	.000250	0.	....	
7, 000	35, 000	.001000	.000150	0.	....	
8, 000	40, 000	.001150	.000150	0.	....	
9, 000	45, 000	.001300	.000150	0.	....	
10, 000	50, 000	.001450	.000150	0.	....	
10, 200	51, 000	.001500	.000050	....	....	
10, 400	52, 000	.001550	.000050	....	....	
10, 600	53, 000	.001600	.000050	....	....	Elastic limit.
10, 800	54, 000	.011000	.009400	....	....	
11, 000	55, 000	.011450	.000450	....	....	
11, 200	56, 000	.012050	.000600	....	....	
11, 400	57, 000	.012850	.000800	....	....	
11, 600	58, 000	.013650	.000800	....	....	
11, 800	59, 000	.014850	.001200	....	....	
12, 000	60, 000	.015850	.001000	....	....	
12, 400	62, 000	.018050	.002200	....	....	
12, 800	64, 000	.020350	.002300	....	....	
13, 200	66, 000	.023050	.002700	....	....	
13, 600	68, 000	.026500	.003450	....	....	
14, 000	70, 000	.029250	.002750	....	....	
14, 400	72, 000	.032750	.003500	....	....	
14, 800	74, 000	.037000	.004250	....	....	
15, 200	76, 000	.041750	.004750	....	....	
15, 600	78, 000	.047000	.005250	....	....	
16, 000	80, 000	.053000	.006000	....	....	
16, 400	82, 000	.0600	.0070	....	....	
16, 800	84, 000	.0650	.0050	....	....	
17, 200	86, 000	.0900	.0250	....	....	
17, 600	88, 000	.1100	.0200	....	....	
17, 680	88, 400	.1500	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	88, 400
Elastic limit per square inch of original section	do...	53, 000
Elongation per inch after rupture	inch..	0. 1800
Elongation per inch under strain at elastic limit	do...	.001600
Reduction in diameter at point of rupture	do...	.055
Reduction in area after rupture, per centum of original section		20. 5
Position of rupture		″.10 from neck
Character of broken surface		silky; flaky
Elongation of inch sections		″.22*, ″.14

No. 2195.

Marks, $\overset{32\,J_{11}}{B\,T_2\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000450	.000100	0.	....	
5,000	25,000	.000600	.000150	0.	....	
6,000	30,000	.000800	.000200	0.	....	
7,000	35,000	.001000	.000200	0.	....	
8,000	40,000	.001200	.000200	0.	....	
9,000	45,000	.001350	.000150	0.	....	
10,000	50,000	.001550	.900200	0.	....	Elastic limit.
10,200	51,000	.008600	.007050	....	....	
10,400	52,000	.009350	.000750	....	....	
10,600	53,000	.010100	.000750	....	....	
10,800	54,000	.011100	.001000	....	....	
11,000	55,000	.012000	.000900	....	....	
11,200	56,000	.013150	.001150	....	....	
11,400	57,000	.014350	.001200	....	....	
11,600	58,000	.015000	.000650	....	....	
11,800	59,000	.016500	.001500	....	....	
12,000	60,000	.017350	.000850	....	....	
12,400	62,000	.019500	.002150	....	....	
12,800	64,000	.021850	.002350	....	....	
13,200	66,000	.023600	.003750	....	....	
13,600	68,000	.029000	.003400	....	....	
14,000	70,000	.032000	.003000	....	....	
14,400	72,000	.036500	.004500	....	....	
14,800	74,000	.040100	.003600	....	....	
15,200	76,000	.046000	.005900	....	....	
15,600	78,000	.052000	.006000	....	....	
16,000	80,000	.0600	.0080	....	....	
16,400	82,000	.0700	.0100	....	....	
16,800	84,000	.0850	.0150	....	....	
17,200	86,000	.1150	.0300	....	....	
17,350	86,750	.1550	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	86,750
Elastic limit per square inch of original section	do	50,000
Elongation per inch after rupture	inch	0.2400
Elongation per inch under strain at elastic limit	do	.001550
Reduction in diameter at point of rupture	do	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		1 inch from neck
Character of broken surface		silky
Elongation of inch sections		″.25,* ″.23

No. 613.

Marks, $^{32\,J_2}_{B\,T_3}M$
Length, 4''.498.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000200	.000200	0.	....	
5,000	10,000	.000300	.000100	0.	....	
7,500	15,000	.000500	.000200	0.	....	
10,000	20,000	.000700	.000200	0.	....	
12,500	25,000	.000800	.000100	0.	....	
15,000	30,000	.001000	.000200	.000100	.000100	
17,500	35,000	.001250	.000250	.000200	.000100	
20,000	40,000	.001500	.000250	.000250	.000050	
20,500	41,000	.001500	0.	....	....	
21,000	42,000	.001550	.000050	....	....	
21,500	43,000	.001650	.000100	....	....	
22,000	44,000	.001700	.000050	....	....	
22,500	45,000	.001750	.000050	.000300	.000050	
23,000	46,000	.001750	0.	....	....	
23,500	47,000	.001850	.000100	....	....	
24,000	48,000	.001950	.000100	....	....	
24,500	49,000	.002050	.000100	....	....	Elastic limit.
25,000	50,000	.002250	.000200	.000600	.000300	
25,500	51,000	.008500	.006250	.006500	.005900	
26,000	52,000	.008750	.000250	.006750	.000250	
26,500	53,000	.008950	.000200	.007000	.000250	
27,000	54,000	.009250	.000300	.007250	.000250	
27,500	55,000	.009700	.000450	.007700	.000450	
42,800	85,600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds.. 49,000
Compression per inch under stress at elastic limit ....inch.. 0.002050
Ultimate strength per square inch of original section ....pounds.. 85,600
Manner of failure ....triple flexure

[Additional specimens.]

No. 2418.

Marks, $^{32}_{\mathrm{B}}\,\mathrm{T}_4\,{}^{\mathrm{J}_2}_{\mathrm{M}}$.
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000200	.000050	0.	....	
3,000	15,000	.000500	.000300	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.000900	.000100	0.	....	
7,000	35,000	.001100	.000200	....	....	
8,000	40,000	.001350	.000250	....	....	
8,200	41,000	.001400	.000050	....	....	
8,400	42,000	.001450	.000050	....	....	
8,600	43,000	.001500	.000050	....	....	
8,800	44,000	.001550	.000050	....	....	
9,000	45,000	.001600	.000050	....	....	
9,200	46,000	.001650	.000050	....	....	Elastic limit.
9,400	47,000	.001850	.000200	....	....	
9,600	48,000	.002100	.000250	....	....	
9,800	49,000	.002300	.000200	....	....	
10,000	50,000	.002700	.000400	....	....	
10,200	51,000	.002900	.000200	....	....	
10,400	52,000	.003300	.000400	....	....	
10,600	53,000	.003900	.000600	....	....	
10,800	54,000	.004550	.000650	....	....	
11,000	55,000	.005150	.000600	....	....	
11,200	56,000	.005850	.000700	....	....	
11,400	57,000	.006600	.000750	....	....	
11,600	58,000	.007450	.000850	....	....	
11,800	59,000	.008250	.000800	....	....	
12,000	60,000	.009250	.001000	....	....	
12,400	62,000	.010750	.001500	....	....	
12,800	64,000	.012850	.002100	....	....	
13,200	66,000	.014750	.001900	....	....	
13,600	68,000	.016800	.002050	....	....	
14,000	70,000	.018800	.002000	....	....	
14,400	72,000	.021550	.002750	....	....	
14,800	74,000	.023750	.002200	....	....	
15,200	76,000	.026200	.002450	....	....	
15,600	78,000	.029100	.002900	....	....	
16,000	80,000	.032150	.003050	....	....	
16,400	82,000	.035850	.003700	....	....	
16,800	84,000	.040750	.004900	....	....	
17,200	86,000	.046000	.005250	....	....	
17,600	88,000	.0500	.0040	....	....	
18,000	90,000	.0550	.0050	....	....	
18,400	92,000	.0650	.0100	....	....	
18,800	94,000	.0850	.0200	....	....	
19,110	95,550	.1350	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	95,550
Elastic limit per square inch of original section	do	46,000
Elongation per inch after rupture	inch	0.2200
Elongation per inch under strain at elastic limit	do	.001650
Reduction in diameter at point of rupture	do	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		1″.55 from neck; oblique
Character of broken surface		silky
Elongation of inch sections		″.28*, ″.16

No. 2419.

Marks, $\substack{32\ J_{21} \\ B\ T_5\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000600	.000200	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000900	.000150	0.	....	
7, 000	35, 000	.001110	.000200	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001500	.000250	0.	....	
9, 200	46, 000	.001600	.000100	....	....	
9, 400	47, 000	.001650	.000050	....	....	Elastic limit.
9, 600	48, 000	.001900	.000250	....	....	
9, 800	49, 000	.002350	.000450	....	....	
10, 000	50, 000	.002750	.000400	....	....	
10, 200	51, 000	.003350	.000600	....	....	
10, 400	52, 000	.004100	.000750	....	....	
10, 600	53, 000	.004750	.000650	....	....	
10, 800	54, 000	.005500	.000750	....	....	
11, 000	55, 000	.006250	.000750	....	....	
11, 200	56, 000	.007250	.001000	....	....	
11, 400	57, 000	.008000	.000750	....	....	
11, 600	58, 000	.009000	.001000	....	....	
11, 800	59, 000	.009750	.000750	....	....	
12, 000	60, 000	.010600	.000850	....	....	
12, 400	62, 000	.012850	.002250	....	....	
12, 800	64, 000	.015000	.002150	....	....	
13, 200	66, 000	.017250	.002250	....	....	
13, 600	68, 000	.019550	.002300	....	....	
14, 000	70, 000	.022000	.002450	....	....	
14, 400	72, 000	.024550	.002550	....	....	
14, 800	74, 000	.027250	.002700	....	....	
15, 200	76, 000	.030250	.003000	....	....	
15, 600	78, 000	.033550	.003300	....	....	
16, 000	80, 000	.037600	.003950	....	....	
16, 400	82, 000	.041500	.004000	....	....	
16, 800	84, 000	.047100	.005600	....	....	
17, 200	86, 000	.0550	.0079	....	....	
17, 600	88, 000	.0600	.0050	....	....	
18, 000	90, 000	.0700	.0100	....	....	
18, 400	92, 000	.0850	.0150	....	....	
18, 510	92, 550	.1300	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	92, 550
Elastic limit per square inch of original section	do...	47, 000
Elongation per inch after rupture	inch..	0. 2150
Elongation per inch under strain at elastic limit	do...	.001650
Reduction in diameter at point of rupture	do...	.135
Reduction in area after rupture, per centum of original section		46. 2
Position of rupture		1″.15 from neck; oblique
Character of broken surface		silky
Elongation of inch sections		″.28*, ″.15

No. 652.

Marks, ${}^{32\ J_2}_{B\ T_6\ M}$
Length, 4''.506.
Diameter, ''.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000133	.000133	0.	....	
5, 000	10, 000	.000300	.000167	0.	....	
7, 500	15, 000	.000467	.000167	0.	....	
10, 000	20, 000	.000633	.000166	0.	....	
12, 500	25, 000	.000833	.000200	0.	....	
15, 000	30, 000	.001000	.000167	0.	....	
17, 500	35, 000	.001167	.000167	.000033	.000033	
20, 000	40, 000	.001333	.000166	.000067	.000034	
20, 500	41, 000	.001367	.000034	....	....	
21, 000	42, 000	.001400	.000033	....	....	
21, 500	43, 000	.001467	.000067	....	....	
22, 000	41, 000	.001567	.000100	....	....	
22, 500	45, 000	.001600	.000033	....	....	
23, 000	46, 000	.001667	.000067	....	....	
23, 500	47, 000	.001767	.000100	....	....	
24, 000	48, 000	.001867	.000100	....	....	Elastic limit.
24, 500	49, 000	.002033	.000166	....	....	
25, 000	50, 000	.002233	.000200	....	....	
25, 500	51, 000	.003533	.001300	....	....	
26, 000	52, 000	.002767	.001234	....	....	
26, 500	53, 000	.002967	.000200	....	....	
27, 000	54, 000	.003267	.000300	....	....	
27, 500	55, 000	.003733	.000466	....	....	
28, 000	56, 000	.004067	.000334	....	....	
48, 800	97, 600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section....................................pounds.. 48, 000
Compression per inch under stress at elastic limit....................................inch.. .001867
Ultimate strength per square inch of original section ....pounds.. 97, 600
Manner of failure..triple flexure

NEW JACKET NO. 21.

No. 2698.

Marks, $^{32\ J_{21}}_{M\ T_7\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000300	.000200	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000800	.000200	0.	....	
6, 000	30, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001100	.000150	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001450	.000200	....	....	
10, 000	50, 000	.001700	.000250	....	....	
10, 200	51, 000	.001700	0.	....	....	
10, 400	52, 000	.001750	.000050	....	....	
10, 600	53, 000	.001800	.000050	....	....	
10, 800	54, 000	.001900	.000100	....	....	
11, 000	55, 000	.001950	.000050	....	....	
11, 200	56, 000	.002000	.000050	....	....	
11, 400	57, 000	.002050	.000050	....	....	Elastic limit.
11, 600	58, 000	.004600	.002550	....	....	
11, 800	59, 000	.005500	.000900	....	....	
12, 000	60, 000	.006250	.000750	....	....	
12, 400	62, 000	.007600	.001350	....	....	
12, 800	64, 000	.009250	.001650	....	....	
13, 200	66, 000	.010000	.000750	....	....	
13, 600	68, 000	.011500	.001500	....	....	
14, 000	70, 000	.013000	.001500	....	....	
14, 400	72, 000	.014750	.001750	....	....	
14, 800	74, 000	.016250	.001500	....	....	
15, 200	76, 000	.018100	.001850	....	....	
15, 600	78, 000	.019500	.001400	....	....	
16, 000	80, 000	.021500	.002000	....	....	
16, 400	82, 000	.023150	.001650	....	....	
16, 800	84, 000	.025500	.002350	....	....	
17, 200	86, 000	.027500	.002000	....	....	
17, 600	88, 000	.030000	.002500	....	....	
18, 000	90, 000	.032500	.002500	....	....	
18, 400	92, 000	.035000	.002500	....	....	
18, 800	94, 000	.038750	.003750	....	....	
19, 200	96, 000	.042000	.003250	....	....	
19, 600	98, 000	.046500	.004500	....	....	
20, 000	100, 000	.0500	.0035	....	....	
20, 400	102, 000	.0550	.0050	....	....	
20, 800	104, 000	.0600	.0050	....	....	
21, 200	106, 000	.0700	.0100	....	....	
21, 580	107, 900	.1100	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	107, 900
Elastic limit per square inch of original section	do .	57, 000
Elongation per inch after rupture	inch..	0. 1400
Elongation per inch under strain at elastic limit	do...	.002050
Reduction in diameter at point of rupture	do...	.055
Reduction in area after rupture, per centum of original section		20. 5
Position of rupture		″.45 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.18*, ″.10

No. 652.

Marks, $^{32\ J_{2_1}}_{B\ T_6\ M}$
Length, 4″.506.
Diameter, ″.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000133	.000133	0.	....	
5, 000	10, 000	.000300	.000167	0.	....	
7, 500	15, 000	.000467	.000167	0.	....	
10, 000	20, 000	.000633	.000166	0.	....	
12, 500	25, 000	.000833	.000200	0.	....	
15, 000	30, 000	.001000	.000167	0.	....	
17, 500	35, 000	.001167	.000167	.000033	.000033	
20, 000	40, 000	.001333	.000166	.000067	.000034	
20, 500	41, 000	.001367	.000034	....	....	
21, 000	42, 000	.001400	.000033	....	....	
21, 500	43, 000	.001467	.000067	....	....	
22, 000	44, 000	.001567	.000100	....	....	
22, 500	45, 000	.001600	.000033	....	....	
23, 000	46, 000	.001667	.000067	....	....	
23, 500	47, 000	.001767	.000100	....	....	
24, 000	48, 000	.001867	.000100	....	....	Elastic limit.
24, 500	49, 000	.002033	.000166	....	....	
25, 000	50, 000	.002233	.000200	....	....	
25, 500	51, 000	.003533	.001300	....	....	
26, 000	52, 000	.002767	.001234	....	....	
26, 500	53, 000	.002967	.000200	....	....	
27, 000	54, 000	.003267	.000300	....	....	
27, 500	55, 000	.003733	.000466	....	....	
28, 000	56, 000	.004067	.000334	....	....	
48, 800	97, 600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section......pounds..	48, 000
Compression per inch under stress at elastic limit......inch..	.001867
Ultimate strength per square inch of original section......pounds..	97, 600
Manner of failure......	triple flexure

NEW JACKET NO. 21.

No. 2698.

Marks, $\overset{32\ J_{21}}{M\ T,\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001250	.000150	0.	....	
9,000	45,000	.001450	.000200	....	....	
10,000	50,000	.001700	.000250	....	....	
10,200	51,000	.001700	0.	....	....	
10,400	52,000	.001750	.000050	....	....	
10,600	53,000	.001800	.000050	....	....	
10,800	54,000	.001900	.000100	....	....	
11,000	55,000	.001950	.000050	....	....	
11,200	56,000	.002000	.000050	....	....	
11,400	57,000	.002050	.000050	....	....	Elastic limit.
11,600	58,000	.004600	.002550	....	....	
11,800	59,000	.005500	.000900	....	....	
12,000	60,000	.006250	.000750	....	....	
12,400	62,000	.007600	.001350	....	....	
12,800	64,000	.009250	.001650	....	....	
13,200	66,000	.010000	.000750	....	....	
13,600	68,000	.011500	.001500	....	....	
14,000	70,000	.013000	.001500	....	....	
14,400	72,000	.014750	.001750	....	....	
14,800	74,000	.016250	.001500	....	....	
15,200	76,000	.018100	.001850	....	....	
15,600	78,000	.019500	.001400	....	....	
16,000	80,000	.021500	.002000	....	....	
16,400	82,000	.023150	.001650	....	....	
16,800	84,000	.025500	.002350	....	....	
17,200	86,000	.027500	.002000	....	....	
17,600	88,000	.030000	.002500	....	....	
18,000	90,000	.032500	.002500	....	....	
18,400	92,000	.035000	.002500	....	....	
18,800	94,000	.038750	.003750	....	....	
19,200	96,000	.042000	.003250	....	....	
19,600	98,000	.046500	.004500	....	....	
20,000	100,000	.0500	.0035	....	....	
20,400	102,000	.0550	.0050	....	....	
20,800	104,000	.0600	.0050	....	....	
21,200	106,000	.0700	.0100	....	....	
21,580	107,900	.1100	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	107,900
Elastic limit per square inch of original section	do	57,000
Elongation per inch after rupture	inch	0.1400
Elongation per inch under strain at elastic limit	do	.002050
Reduction in diameter at point of rupture	do	.055
Reduction in area after rupture, per centum of original section		20.5
Position of rupture		″.45 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.18, ″.10

No. 652.

Marks, ${}^{32\,J_{21}}_{B\,T_6\,M}$
Length, 4''.506.
Diameter, ''.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000133	.000133	0.	....	
5,000	10,000	.000300	.000167	0.	....	
7,500	15,C00	.000467	.000167	0.	....	
10,000	20,000	.000633	.000166	0.	....	
12,500	25,000	.000833	.000200	0.	....	
15,000	30,000	.001000	.000167	0.	....	
17,500	35,000	.001167	.000167	.000033	.000033	
20,000	40,000	.001333	.000166	.000067	.000034	
20,500	41,000	.001367	.000034	....	....	
21,000	42,000	.001400	.000033	....	....	
21,500	43,000	.001467	.000067	....	....	
22,000	41,000	.001567	.000100	....	....	
22,500	45,000	.001600	.000033	....	....	
23,000	46,000	.001667	.000067	....	....	
23,500	47,000	.001767	.000100	....	....	
24,000	48,000	.001867	.000100	....	....	Elastic limit.
24,500	49,000	.002033	.000166	....	....	
25,000	50,000	.002233	.000200	....	....	
25,500	51,000	.003533	.001300	....	....	
26,000	52,000	.002767	.001234	....	....	
26,500	53,000	.002967	.000200	....	....	
27,000	54,000	.003267	.000300	....	....	
27,500	55,000	.003733	.000466	....	....	
28,000	56,000	.004067	.000334	....	....	
48,800	97,600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section..........pounds.. 48,000
Compression per inch under stress at elastic limit..........inch.. .001867
Ultimate strength per square inch of original section..........pounds.. 97,600
Manner of failure..........triple flexure

NEW JACKET NO. 21.

No. 2698.

Marks, $^{32\ J_2}_{M\ T_7\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001250	.000150	0.	....	
9,000	45,000	.001450	.000200	....	....	
10,000	50,000	.001700	.000250	....	....	
10,200	51,000	.001700	0.	....	....	
10,400	52,000	.001750	.000050	....	....	
10,600	53,000	.001800	.000050	....	....	
10,800	54,000	.001900	.000100	....	....	
11,000	55,000	.001950	.000050	....	....	
11,200	56,000	.002000	.000050	....	....	
11,400	57,000	.002050	.000050	....	....	Elastic limit.
11,600	58,000	.004600	.002550	....	....	
11,800	59,000	.005500	.000900	....	....	
12,000	60,000	.006250	.000750	....	....	
12,400	62,000	.007600	.001350	....	....	
12,800	64,000	.009250	.001650	....	....	
13,200	66,000	.010000	.000750	....	....	
13,600	68,000	.011500	.001500	....	....	
14,000	70,000	.013000	.001500	....	....	
14,400	72,000	.014750	.001750	....	....	
14,800	74,000	.016250	.001500	....	....	
15,200	76,000	.018100	.001850	....	....	
15,600	78,000	.019500	.001400	....	....	
16,000	80,000	.021500	.002000	....	....	
16,400	82,000	.023150	.001650	....	....	
16,800	84,000	.025500	.002350	....	....	
17,200	86,000	.027500	.002000	....	....	
17,600	88,000	.030000	.002500	....	....	
18,000	90,000	.032500	.002500	....	....	
18,400	92,000	.035000	.002500	....	....	
18,800	94,000	.038750	.003750	....	....	
19,200	96,000	.042000	.003250	....	....	
19,600	98,000	.046500	.004500	....	....	
20,000	100,000	.0500	.0035	....	....	
20,400	102,000	.0550	.0050	....	....	
20,800	104,000	.0600	.0050	....	....	
21,200	106,000	.0700	.0100	....	....	
21,580	107,900	.1100	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	107,900
Elastic limit per square inch of original section	do .	57,000
Elongation per inch after rupture	inch..	0.1400
Elongation per inch under strain at elastic limit	do...	.002050
Reduction in diameter at point of rupture	do...	.055
Reduction in area after rupture, per centum of original section		20.5
Position of rupture		″.45 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.18*, ″.10

No. 2699.

Marks, $\overset{32\ J_2}{M\ T_8\ \underline{M}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.		
2,000	10,000	.000300	.000200	0.		
3,000	15,000	.000450	.000150	0.		
4,000	20,000	.000550	.000100	0.		
5,000	25,000	.000700	.000150	0.		
6,000	30,000	.000900	.000200	0.		
7,000	35,000	.001050	.000150	0.		
8,000	40,000	.001200	.000150	0.		
9,000	45,000	.001400	.000200			
10,000	50,000	.001550	.000150			
10,200	51,000	.001550	0.			
10,400	52,000	.001600	.000050			
10,600	53,000	.001650	.000050			
10,800	54,000	.001650	0.			
11,000	55,000	.001700	.000050			
11,200	56,000	.001750	.000050			
11,400	57,000	.001800	.000050			Elastic limit.
11,600	58,000	.003850	.002050			
11,800	59,000	.006000	.002150			
12,000	60,000	.006500	.000500			
12,400	62,000	.008000	.001500			
12,800	64,000	.009500	.001500			
13,200	66,000	.010950	.001450			
13,600	68,000	.012000	.001050			
14,000	70,000	.014000	.002000			
14,400	72,000	.015200	.001200			
14,800	74,000	.016750	.001550			
15,200	76,000	.018500	.001750			
15,600	78,000	.020000	.001500			
16,000	80,000	.021500	.001500			
16,400	82,000	.023250	.001750			
16,800	84,000	.025750	.002500			
17,200	86,000	.028000	.002250			
17,600	88,000	.030500	.002500			
18,000	90,000	.033750	.003250			
18,400	92,000	.036500	.002750			
18,800	94,000	.040100	.003600			
19,200	96,000	.043500	.003400			
19,600	98,000	.048500	.005000			
20,000	100,000	.0550	.0065			
20,400	102,000	.0600	.0050			
20,800	104,000	.0700	.0100			
21,200	106,000	.0800	.0100			
21,460	107,400	.1150	.0350			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	107,400
Elastic limit per square inch of original section	do	57,000
Elongation per inch after rupture	inch	0.2250
Elongation per inch under strain at elastic limit	do	.001800
Reduction in diameter at point of rupture	do	.105
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		″.23 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.17, ″.28*

No. 669.

Marks, $\overset{32\ J_2}{\text{M T, M}}$
Length, 4''.506.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000167	.000167	0.	....	
5,000	10,000	.000333	.000166	0.	....	
7,500	15,000	.000500	.000167	0.	....	
10,000	20,000	.000667	.000167	0.	....	
12,500	25,000	.000833	.000166	0.	....	
15,000	30,000	.001000	.000167	0.	....	
17,500	35,000	.001167	.000167	0.	....	
20,000	40,000	.001333	.000166	0.	....	
20,500	41,000	.001367	.000034	....	....	
21,000	42,000	.001400	.000033	....	....	
21,500	43,000	.001433	.000033	....	....	
22,000	44,000	.001467	.000034	....	....	
22,500	45,000	.001500	.000033	....	....	
23,000	46,000	.001533	.000033	....	....	
23,500	47,000	.001567	.000034	....	....	
24,000	48,000	.001600	.000033	....	....	
24,500	49,000	.001633	.000033	....	....	
25,000	50,000	.001667	.000034	....	....	
25,500	51,000	.001700	.000033	....	....	
26,000	52,000	.001733	.000033	....	....	
26,500	53,000	.001800	.000067	....	....	
27,000	54,000	.001833	.000033	....	....	
27,500	55,000	.001867	.000034	....	....	
28,000	56,000	.001900	.000033	....	....	Elastic limit.
28,500	57,000	.002933	.001033	....	....	
29,000	58,000	.003800	.000867	....	....	
29,500	59,000	.004333	.000533	....	....	
30,000	60,000	.005100	.000767	....	....	
50,900	101,920	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	56,000
Compression per inch under stress at elastic limit	inch..	0.001900
Ultimate strength per square inch of original section	pounds..	101,920
Manner of failure		triple flexure

[Additional specimens from new jacket.]

No. 2616.

Marks, $\genfrac{}{}{0pt}{}{32\ R_{81}\ J}{M\ J_{10}\ M}$
Diameter, ″.506.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000500	.000150	0.	....	
5,000	25,000	.000600	.000100	0.	....	
6,000	30,000	.000750	.000150	0.	....	
7,000	35,000	.000950	.000200	0.	....	
8,000	40,000	.001150	.000200	0.	....	
8,200	41,000	.001200	.000050	....	....	
8,400	42,000	.001250	.000050	....	....	
8,600	43,000	.001300	.000050	....	....	
8,800	44,000	.001350	.000050	....	....	
9,000	45,000	.001400	.000050	....	....	
9,200	46,000	.001450	.000050	....	....	
9,400	47,000	.001500	.000050	....	....	
9,600	48,000	.001500	0.	....	....	
9,800	49,000	.001550	.000050	....	....	
10,000	50,000	.001650	.000100	....	....	
10,200	51,000	.001650	0.	....	....	
10,400	52,000	.001700	.000050	....	....	
10,600	53,000	.001750	.000050	....	....	
10,800	54,000	.001750	0.	....	....	
11,000	55,000	.001800	.000050	....	....	Elastic limit.
11,200	56,000	.005750	.003950	....	....	
11,400	57,000	.006600	.000850	....	....	
11,600	58,000	.007050	.000450	....	....	
11,800	59,000	.007800	.000750	....	....	
12,000	60,000	.008400	.000600	....	....	
12,400	62,000	.009700	.001300	....	....	
12,800	64,000	.011150	.001450	....	....	
13,200	66,000	.012650	.001500	....	....	
13,600	68,000	.014550	.001900	....	....	
14,000	70,000	.016000	.001450	....	....	
14,400	72,000	.017900	.001900	....	....	
14,800	74,000	.019500	.001600	....	....	
15,200	76,000	.021500	.002000	....	....	
15,600	78,000	.023500	.002000	....	....	
16,000	80,000	.026000	.002500	....	....	
16,400	82,000	.029000	.003000	....	....	
16,800	84,000	.031550	.002550	....	....	
17,200	86,000	.034750	.003200	....	....	
17,600	88,000	.037850	.003100	....	....	
18,000	90,000	.041750	.003900	....	....	
18,400	92,000	.045750	.004000	....	....	
18,800	94,000	.0500	.004250	....	....	
19,200	96,000	.0550	.0050	....	....	
19,600	98,000	.0650	.0100	....	....	
20,000	100,000	.0800	.0150	....	....	
20,400	102,000	.1000	.0200	....	....	
20,490	102,450	.1350	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	102,450
Elastic limit per square inch of original section........do...	55,000
Elongation per inch after rupture........inch..	0.2350
Elongation per inch under strain at elastic limit........do...	.001800
Reduction in diameter at point of rupture........do...	.136
Reduction in area after rupture, per centum of original section	46.2
Position of rupture........	¾ inch from neck
Character of broken surface........	silky
Elongation of inch sections........	″.34*, ″.13

No. 2617.

Marks, $\overset{22\ R_{31}\ J}{M\ T_{11}\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000350	.000100	0.	....	
4,000	20,000	.000500	.000150	0.	....	
5,000	25,000	.000650	.000150	0.	....	
6,000	30,000	.000800	.000150	0.	....	
7,000	35,000	.001000	.000200	0.	....	
8,000	40,000	.001150	.000150	0.	....	
9,000	45,000	.001350	.000200	....	....	
10,000	50,000	.001550	.000200	....	....	
10,200	51,000	.001600	.000050	....	....	
10,400	52,000	.001600	0.	....	....	
10,600	53,000	.001650	.000050	....	....	
10,800	54,000	.001700	.000050	....	....	Elastic limit.
11,000	55,000	.001850	.000150	....	....	
11,200	56,000	.006000	.004150	....	....	
11,400	57,000	.006700	.000700	....	....	
11,600	58,000	.007100	.000400	....	....	
11,800	59,000	.007750	.000650	....	....	
12,000	60,000	.008650	.000900	....	....	
12,400	62,000	.010000	.001350	....	....	
12,800	64,000	.011400	.001400	....	....	
13,200	66,000	.013000	.001600	....	....	
13,600	68,000	.014800	.001800	....	....	
14,000	70,000	.016400	.001600	....	....	
14,400	72,000	.018000	.001600	....	....	
14,800	74,000*	.019850	.001850	....	....	
15,200	76,000	.021800	.001950	....	....	
15,600	78,000	.024000	.002200	....	....	
16,000	80,000	.026350	.002350	....	....	
16,400	82,000	.029100	.002750	....	....	
16,800	84,000	.032000	.002900	....	....	
17,200	86,000	.035050	.003050	....	....	
17,600	88,000	.038300	.003250	....	....	
18,000	90,000	.043000	.004700	....	....	
18,400	92,000	.047500	.004500	....	....	
18,800	94,000	.052000	.004500	....	....	
19,200	96,000	.0550	.0030	....	....	
19,600	98,000	.0650	.0100	....	....	
20,000	100,000	.0800	.0150	....	....	
20,400	102,000	.1050	.0250	....	....	
20,420	102,100	.1550	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	102,100
Elastic limit per square inch of original section	do...	54,000
Elongation per inch after rupture	inch..	0.2350
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	.085
Reduction in area after rupture, per centum of original section		30.7
Position of rupture		1 inch from neck
Character of broken surface		granular; silky spot at circumference; opened cracks in surface of stem
Elongation of inch sections		″.19, ″.28*

No. 678.

Marks, $\frac{32\ R_{21}\ J}{M\ T_{12}\ M}$
Length, 4''.504.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	. 000167	. 000167	0.	....	
5, 000	10, 000	. 000333	. 000166	0.	....	
7, 500	15, 000	. 000500	. 000167	0.	....	
10, 000	20, 000	. 000667	. 000167	0.	....	
12, 500	25, 000	. 000832	. 000166	0.	....	
15, 000	30, 000	. 001000	. 000167	0.	....	
17, 500	35, 000	. 001200	. 000200	. 000067	. 000067	
20, 000	40, 000	. 001367	. 000167	....	....	
20, 500	41, 000	. 001400	. 000033	....	....	
21, 000	42, 000	. 001467	. 000067	....	....	
21, 500	43, 000	. 001500	. 000033	....	....	
22, 000	44, 000	. 001533	. 000033	....	....	
22, 500	45, 000	. 001567	. 000034	....	....	
23, 000	46, 000	. 001633	. 000066	....	....	
23, 500	47, 000	. 001667	. 000034	....	....	
24, 000	48, 000	. 001700	. 000033	....	....	
24, 500	49, 000	. 001767	. 000067	....	....	
25, 000	50, 000	. 001833	. 000066	....	....	
25, 500	51, 000	. 001867	. 000034	....	....	
26, 000	52, 000	. 001900	. 000033	....	....	
26, 500	53, 000	. 002000	. 000100	....	....	
27, 000	54, 000	. 002067	. 000067	....	....	Elastic limit.
27, 500	55, 000	. 002300	. 000233	....	....	
28, 000	56, 000	. 006833	. 004533	....	....	
28, 500	57, 000	. 008267	. 001434	....	....	
29, 000	58, 000	. 009500	. 001233	....	....	
48, 580	97, 160	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	54, 000
Compression per inch under stress at elastic limit	inch..	0. 002067
Ultimate strength per square inch of original section	pounds..	97, 160
Manner of failure		triple flexure

No. 2254.

Marks, $\overset{32\ Jn}{M\ T,\ M}$
Diameter, ".505.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	— .000050	— .000050	
2,000	10,000	.000250	.000150	— .000050	0.	
3,000	15,000	.000400	.000150	— .000100	— .000050	
4,000	20,000	.000550	.000150	— .000100	0.	
5,000	25,000	.000700	.000150	— .000100	0.	
6,000	30,000	.000850	.000150	— .000100	0.	
7,000	35,000	.001050	.000200	— .000100	0.	
8,000	40,000	.001250	.000200	— .000100	0.	
9,000	45,000	.001400	.000150	— .000100	0.	
10,000	50,000	.001600	.000200	— .000100	0.	
10,200	51,000	.001600	0.	....	....	
10,400	52,000	.001650	.000050	....	....	
10,600	53,000	.001650	0.	....	....	
10,800	54,000	.001700	.000050	....	....	
11,000	55,000	.001750	.000050	....	....	
11,200	56,000	.001800	.000050	....	....	
11,400	57,000	.001800	0.	....	....	
11,600	58,000	.001850	.000050	....	....	
11,800	59,000	.001850	0.	....	....	
12,000	60,000	.001900	.000050	....	....	
12,200	61,000	.001950	.000050	....	....	
12,400	62,000	.002000	.000050	....	....	Elastic limit.
12,600	63,000	.002750	.000750	....	....	
12,800	64,000	.003350	.000600	....	....	
13,000	65,000	.004750	.001400	....	....	
13,200	66,000	.007000	.002250	....	....	
13,400	67,000	.007750	.000750	....	....	
13,600	68,000	.008400	.000650	....	....	
13,800	69,000	.009000	.000600	....	....	
14,000	70,000	.009750	.000750	....	....	
14,400	72,000	.011250	.001500	....	....	
14,800	74,000	.012750	.001500	....	....	
15,200	76,000	.014750	.002000	....	....	
15,600	78,000	.016100	.001350	....	....	
16,000	80,000	.018150	.002050	....	....	
16,400	82,000	.020250	.002100	....	....	
16,800	84,000	.022500	.002250	....	....	
17,200	86,000	.024500	.002000	....	....	
17,600	88,000	.026400	.001900	....	....	
18,000	90,000	.029000	.002600	....	....	
18,400	92,000	.032450	.003450	....	....	
18,800	94,000	.034500	.002050	....	....	
19,200	96,000	.037500	.003000	....	....	
19,600	98,000	.041250	.003750	....	....	
20,000	100,000	.046500	.005250	....	....	
20,400	102,000	.0500	.0035	....	....	
20,800	104,000	.0600	.0100	....	....	
21,200	106,000	.0700	.0100	....	....	
21,600	108,000	.0950	.0250	....	....	
21,810	109,050	.1200	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	109,050
Elastic limit per square inch of original section	do...	62,000
Elongation per inch after rupture	inch..	0.1950
Elongation per inch under strain at elastic limit	do...	.002000
Reduction in diameter at point of rupture	do...	.085
Reduction in area after rupture, per centum of original section		30.7
Position of rupture		".6 from neck
Character of broken surface		granular, radiating from dull metal at circumference
Elongation of inch sections		".27*, ".12

No. 2255.

Marks, $^{32\ J_{22}}_{M\ T_{2}\ M}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000250	.000100	—.000050	—.000050	
3, 000	15, 000	.000350	.000100	—.000100	—.000050	
4, 000	20, 000	.000500	.000150	—.000100	0.	
5, 000	25, 000	.000650	.000150	—.000150	—.000050	
6, 000	30, 000	.000750	.000100	—.000200	—.000050	
7, 000	35, 000	.000850	.000100	—.000200	0.	
8, 000	40, 000	.001000	.000150	—.000200	0.	
9, 000	45, 000	.001200	.000200	—.000200	0.	
10, 000	50, 000	.001350	.000150	—.000200	0.	
11, 000	55, 000	.001500	.000150	....	....	
11, 200	56, 000	.001550	.000050	....	....	
11, 400	57, 000	.001600	.000050	....	....	
11, 600	58, 000	.001700	.000100	....	....	
11, 800	59, 000	.001750	.000050	....	....	Elastic limit.
12, 000	60, 000	.007000	.005250	....	....	
12, 200	61, 000	.007750	.000750	....	....	
12, 400	62, 000	.008250	.000500	....	....	
12, 600	63, 000	.009000	.000750	....	....	
12, 800	64, 000	.010000	.001000	....	....	
13, 200	66, 000	.011000	.001000	....	....	
13, 600	68, 000	.013000	.002000	....	....	
14, 000	70, 000	.014600	.001600	....	....	
14, 400	72, 000	.016500	.001900	....	....	
14, 800	74, 000	.018000	.001500	....	....	
15, 200	76, 000	.020000	.002000	....	....	
15, 600	78, 000	.022250	.002250	....	....	
16, 000	80, 000	.024150	.001900	....	....	
16, 400	82, 000	.026750	.002600	....	....	
16, 800	84, 000	.029750	.003000	....	....	
17, 200	86, 000	.032000	.002250	....	....	
17, 600	88, 000	.035500	.003500	....	....	
18, 000	90, 000	.039250	.003750	....	....	
18, 400	92, 000	.044250	.005000	....	....	
18, 800	94, 000	.050000	.005750	....	....	
19, 200	96, 000	.0600	.0100	....	....	
19, 600	98, 000	.0700	.0100	....	....	
20, 000	100, 000	.1800	.0100	....	....	
20, 400	102, 000	.1000	.0200	....	....	
20, 490	102, 450	.1300	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	102, 450
Elastic limit per square inch of original section	do...	59, 000
Elongation per inch after rupture	inch..	0. 2000
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.125
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		".60 from neck
Character of broken surface		silky; traces of granulation
Elongation of inch sections		".30*, ".10

No. 629.

Marks, $^{32\ \mathrm{Jr}}_{\mathrm{M\ T,\ M}}$
Length, 4''.502.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000133	.000133	0.	....	
5,000	10,000	.000267	.000134	0.	....	
7,500	15,000	.000400	.000133	0.	....	
10,000	20,000	.000567	.000167	0.	....	
12,500	25,000	.000700	.000133	0.	....	
15,000	30,000	.000867	.000167	— .000033	— .000033	
17,500	35,000	.001000	.000133	— .000067	— .000034	
20,000	40,000	.001167	.000167	— .000067	0.	
22,500	45,000	.001300	.000133	— .000067	0.	
23,000	46,000	.001333	.000033	....	....	
23,500	47,000	.001333	0.	....	....	
24,000	48,000	.001367	.000034	....	....	
24,500	49,000	.001400	.000033	....	....	
25,000	50,000	.001400	0.	— .000100	— .000033	
25,500	51,000	.001400	0.	....	....	
26,000	52,000	.001433	.000033	....	....	
26,500	53,000	.001467	.000034	....	....	
27,000	54,000	.001433	— .000034	....	....	
27,500	55,000	.001400	— .000033	— .000167	— .000067	Elastic limit.
28,000	56,000	.002400	.001000	....	....	
28,500	57,000	.004200	.001800	....	....	
29,000	58,000	.004900	.000700	....	....	
48,180	96,360	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	55,000
Compression per inch under stress at elastic limit	inch..	0.001400
Ultimate strength per square inch of original section	pounds..	96,360
Manner of failure		triple flexure

No. 2276.

Marks, $^{32\ J\ 4}_{B\ T_1\ M}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000900	.000200	0.	....	
7,000	35,000	.001050	.000150	0.	....	
8,000	40,000	.001200	.000150	0.	....	
9,000	45,000	.001400	.000200	0.	....	
10,000	50,000	.001650	.000250	....	....	
10,200	51,000	.001700	.000050	....	....	
10,400	52,000	.001700	0.	....	....	
10,600	53,000	.001750	.000050	....	....	
10,800	54,000	.001800	.000050	....	....	
11,000	55,000	.001800	0.	....	....	
11,200	56,000	.001850	.000050	....	....	Elastic limit.
11,400	57,000	.006750	.004900	....	....	
11,600	58,000	.007700	.000950	....	....	
11,800	59,000	.008700	.001000	....	....	
12,000	60,000	.009750	.001050	....	....	
12,400	62,000	.011150	.001400	....	....	
12,800	64,000	.012700	.001550	....	....	
13,200	66,000	.014750	.002050	....	....	
13,600	68,000	.017000	.002250	....	....	
14,000	70,000	.019350	.002350	....	....	
14,400	72,000	.021500	.002150	....	....	
14,800	74,000	.024000	.002500	....	....	
15,200	76,000	.026500	.002500	....	....	
15,600	78,000	.029700	.003200	....	....	
16,000	80,000	.033000	.003300	....	....	
16,400	82,000	.036500	.003500	....	....	
16,800	84,000	.040450	.003950	....	....	
17,200	86,000	.045850	.005400	....	....	
17,600	88,000	.051250	.005400	....	....	
18,000	90,000	.0600	.008750	....	....	
18,400	92,000	.0750	.0150	....	....	
18,800	94,000	.0950	.0200	....	....	
19,000	95,000	.1350	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 95,000
Elastic limit per square inch of original section ....do... 56,000
Elongation per inch after rupture....................................inch.. 0.2100
Elongation per inch under strain at elastic limit....................................do... .001850
Reduction in diameter at point of rupture ....do... .095
Reduction in area after rupture, per centum of original section.................................... 34.0
Position of rupture .... ⅝ inch from neck
Character of broken surface....................................granular; dull spot at circumference
Diameter ".1 from point of rupture.................................... ".39
Elongation of inch sections....................................".30*, ".12

No. 2277.

Marks, $\overset{32\ J_{23}}{B\ T_2\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000550	.000150	0.	....	
5, 000	25, 000	.000750	.000200	0.	....	
6, 000	30, 000	.000900	.000150	0.	....	
7, 000	35, 000	.001100	.000200	0.	....	
8, 000	40, 000	.001200	.000100	0.	....	
9, 000	45, 000	.001400	.000200	0.	....	
10, 000	50, 000	.001600	.000200	0.	....	
10, 200	51, 000	.001650	.000050	....	....	
10, 400	52, 000	.001700	.000050	....	....	
10, 600	53, 000	.001700	0.	....	....	
10, 800	54, 000	.001750	.000050	....	....	
11, 000	55, 000	.001800	.000050	....	....	
11, 200	56, 000	.001800	0.	....	....	
11, 400	57, 000	.001850	.000050	....	....	
11, 600	58, 000	.001950	.000100	....	....	Elastic limit.
11, 800	59, 000	.006500	.004550	....	....	
12, 000	60, 000	.007350	.000850	....	....	
12, 400	62, 000	.009350	.002000	....	....	
12, 800	64, 000	.010600	.001250	....	....	
13, 200	66, 000	.012000	.001400	....	....	
13, 600	68, 000	.013750	.001750	....	....	
14, 000	70, 000	.016000	.002250	....	....	
14, 400	72, 000	.017500	.001500	....	....	
14, 800	74, 000	.020000	.002500	....	....	
15, 200	76, 000	.022150	.002150	....	....	
15, 600	78, 000	.024250	.002100	....	....	
16, 000	80, 000	.027250	.003000	....	....	
16, 400	82, 000	.030000	.002750	....	....	
16, 800	84, 000	.032600	.002600	....	....	
17, 200	86, 000	.036000	.003400	....	....	
17, 600	88, 000	.040000	.004000	....	....	
18, 000	90, 000	.044750	.004750	....	....	
18, 400	92, 000	.050000	.005240	....	....	
18, 800	94, 000	.0550	.0050	....	....	
19, 200	96, 000	.0650	.0100	....	....	
19, 600	98, 000	.0850	.0200	....	....	
19, 970	99, 850	.1250	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	99, 850
Elastic limit per square inch of original section	do...	58, 000
Elongation per inch after rupture	inch..	0. 2400
Elongation per inch under strain at elastic limit	do...	.001950
Reduction in diameter at point of rupture	do...	.125
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		″.05 from middle of stem
Character of broken surface		silky, with traces of granulation
Elongation of inch sections		″.32*, ″.16

No. 634.

Marks, $^{32\ J_{22}}_{B\ T_3\ M}$
Length, 4''.504.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000133	.000133	0.	....	
5,000	10,000	.000267	.000134	0.	....	
7,500	15,000	.000433	.000166	.000033	.000033	
10,000	20,000	.000600	.000167	.000033	0.	
12,500	25,000	.000767	.000167	.000033	0.	
15,000	30,000	.000967	.000200	.000033	0.	
17,500	35,000	.001133	.000166	.000033	0.	
20,000	40,000	.001300	.000167	.000033	0.	
22,500	45,000	.001467	.000167	.000033	0.	
23,000	46,000	.001500	.000033	....	....	
23,500	47,000	.001533	.000033	....	....	
24,000	48,000	.001567	.000034	....	....	
24,500	49,000	.001600	.000033	....	....	
25,000	50,000	.001667	.000067	.000033	0.	
25,500	51,000	.001667	0.	....	....	
26,000	52,000	.001700	.000033	....	....	
26,500	53,000	.001733	.000033	....	....	
27,000	54,000	.001767	.000034	....	....	
27,500	55,000	.001800	.000033	.000033	0.	Elastic limit.
28,000	56,000	.001900	.000100	....	....	
28,500	57,000	.001967	.000067	....	....	
29,000	58,000	.002100	.000133	....	....	
29,500	59,000	.006300	.004200	....	....	
30,000	60,000	.008333	.002033	....	....	
47,520	95,040	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section..................................pounds..	55,000
Compression per inch under stress at elastic limit..................................	''0.001800
Ultimate strength per square inch of original section..................................pounds..	95,040
Manner of failure..................................	triple flexure

No. 2256.

Marks, $^{32\ \mathrm{J_M}}_{\mathrm{M\ T,\ M}}$
Diameter, ″.505.
Sectional area, .20 square inch.

pplied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000200	.000200	0.	....	
2,000	10,000	.000300	.000100	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000550	.000100	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001300	.000200	0.	....	
9,000	45,000	.001450	.000150	0.	....	
10,000	50,000	.001600	.000150	0.	....	
10,200	51,000	.001650	.000050	....	....	
10,400	52,000	.001700	.000050	....	....	
10,600	53,000	.001750	.000050	....	....	
10,800	54,000	.001850	.000100	....	....	
11,000	55,000	.001850	0.	....	....	
11,200	56,000	.001900	.000050	....	....	
11,400	57,000	.001950	.000050	....	....	
11,600	58,000	.001950	0.	....	....	
11,800	59,000	.002000	.000050	....	....	Elastic limit.
12,000	60,000	{ .002750	.000750	....	....	
		.007000	.004250	....	....	
12,400	62,000	.008000	.001000	....	....	
12,800	64,000	.009750	.001750	....	....	
13,200	66,000	.011000	.001250	....	....	
13,600	68,000	.012500	.001500	....	....	
14,000	70,000	.014000	.001500	....	....	
14,400	72,000	.015750	.001750	....	....	
14,800	74,000	.017500	.001750	....	....	
15,200	76,000	.019250	.001750	....	....	
15,600	78,000	.021500	.002250	....	....	
16,000	80,000	.024000	.002500	....	....	
16,400	82,000	.026000	.002000	....	....	
16,800	84,000	.029000	.003000	....	....	
17,200	86,000	.031500	.002500	....	....	
17,600	88,000	.034250	.002750	....	....	
18,000	90,000	.037500	.003250	....	....	
18,400	92,000	.041250	.003750	....	....	
18,800	94,000	.045500	.004250	....	....	
19,200	96,000	.050500	.005000	....	....	
19,600	98,000	.0600	.0095	....	....	
20,000	100,000	.0750	.0150	....	....	
20,400	102,000	.0900	.0150	....	....	
20,710	103,550	.1750	.0850	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	103,550
Elastic limit per square inch of original section	do...	59,000
Elongation per inch after rupture	inch..	0.2150
Elongation per inch under strain at elastic limit	do...	.002000
Reduction in diameter at point of rupture	do...	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		1″ from neck
Character of broken surface		silky; interspersed with fine granulaation
Elongation of inch sections		″.29*, ″.14

No. 2257.

Marks, $^{32\ J_{34}}_{M\ T_2\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000200	.000200	0.	....	
2, 000	10, 000	.000400	.000200	0.	....	
3, 000	15, 000	.000500	.000100	0.	....	
4, 000	20, 000	.000700	.000200	0.	....	
5, 000	25, 000	.000900	.000200	0.	....	
6, 000	30, 000	.001000	.000100	0.	....	
7, 000	35, 000	.001200	.000200	0.	....	
8, 000	40, 000	.001400	.000200	0.	....	
9, 000	45, 000	.001550	.000150	0.	....	
10, 000	50, 000	.001700	.000150	0.	....	
10, 200	51, 000	.001750	.000050	....	....	
10, 400	52, 000	.001800	.000050	....	....	
10, 600	53, 000	.001850	.000050	....	....	
10, 800	54, 000	.001900	.000050	....	....	
11, 000	55, 000	.001950	.000050	....	....	
11, 200	56, 000	.002000	.000050	....	....	
11, 400	57, 000	.002100	.000100	....	....	Elastic limit.
11, 600	58, 000	.006900	.000800	....	....	
11, 800	59, 000	.007500	.000600	....	....	
12, 000	60, 000	.008000	.000500	....	....	
12, 400	62, 000	.009600	.001600	....	....	
12, 800	64, 000	.011500	.001900	....	....	
13, 200	66, 000	.012750	.001250	....	....	
13, 600	68, 000	.014250	.001500	....	....	
14, 000	70, 000	.016000	.001750	....	....	
14, 400	72, 000	.017750	.001750	....	....	
14, 800	74, 000	.020000	.002250	....	....	
15, 200	76, 000	.022000	.002000	....	....	
15. 600	78, 000	.024250	.002250	....	....	
16, 000	80. 000	.027000	.002750	....	....	
16, 400	82, 000	.029250	.002250	....	....	
16, 800	84, 000	.031900	.002650	....	....	
17, 200	86, 000	.035000	.003100	....	....	
17, 600	88, 000	.038500	.003500	....	....	
18, 000	90, 000	.042500	.004000	....	....	
18, 400	92, 000	.049500	.007000	....	....	
18, 800	94, 000	.054000	.004500	....	....	
19, 200	96, 000	.0700	.0160	....	....	
19, 600	98, 000	.0800	.0100	....	....	
20, 000	100, 000	.0900	.0100	....	....	
20, 320	101, 600	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section........pounds..	101, 600
Elastic limit per square inch of original section........do...	57, 000
Elongation per inch after rupture........inch..	0. 2000
Elongation per inch under strain at elastic limit........do...	.002100
Reduction in diameter at point of rupture........do...	.115
Reduction in area after rupture, per centum of original section........	40. 3
Position of rupture........	1″.07 from neck
Character of broken surface........	silky
Elongation of inch sections........	″.22*, ″.18

No. 630.

Marks, $\overset{32\,J_{24}}{M\,T_{3}\,M}$
Length, 4''.502.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.		
5, 000	10, 000	.000267	.000167	0.		
7, 500	15, 000	.000400	.000133	0.		
10, 000	20, 000	.000600	.000200	0.		
12, 500	25, 000	.000767	.000167	.000033	.000033	
15, 000	30, 000	.000900	.000133	.000033	0.	
17, 500	35, 000	.001100	.000200	.000033	0.	
20, 000	40, 000	.001267	.000167	.000033	0.	
22, 500	45, 000	.001433	.000166	.000033	0.	
23, 000	46, 000	.001500	.000067			
23, 500	47, 000	.001500	0.			
24, 000	48, 000	.001533	.000033			
24, 500	49, 000	.001567	.000034			
25, 000	50, 000	.001600	.000033	.000033	0.	
25, 500	51, 000	.001633	.000033			
26, 000	52, 000	.001667	.000034			
26, 500	53, 000	.001700	.000033			
27, 000	54, 000	.001733	.000033			
27, 500	55, 000	.001767	.000034	.000067	.000034	
28, 000	56, 000	.001800	.000033			
28, 500	57, 000	.001833	.000033			Elastic limit.
29, 900	58, 000	.003267	.001434			
29, 500	59, 000	.008100	.004833			
30, 000	60, 000	.009233	.001133			
49, 080	98, 160					Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds.. 57, 000
Compression per inch under stress at elastic limit ....inch.. 0.001833
Ultimate strength per square inch of original section ....pounds.. 98, 160
Manner of failure ....triple flexure

No. 2278.

Marks, $^{32\ \mathrm{J}*}_{\mathrm{B\ T_1\ M}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000350	.000200	0.	....	
3, 000	15, 000	.000600	.000250	0.	....	
4, 000	20, 000	.000850	.000250	0.	....	
5, 000	25, 000	.001000	.000150	0.	....	
6, 000	30, 000	.001200	.000200	0.	....	
7, 000	35, 000	.001300	.000100	0.	....	
8, 000	40, 000	.001500	.000200	.000050	.000050	
9, 000	45, 000	.001650	.000150	....	....	
10, 000	50, 000	.001950	.000300	....	....	
10, 200	51, 000	.002000	.000050	....	....	
10, 400	52, 000	.002050	.000050	....	....	
10, 600	53, 000	.002050	0.	....	....	
10, 800	54, 000	.002100	.000050	....	....	Elastic limit.
11, 000	55, 000	.003500	.001400	....	....	
11, 200	56, 000	.005000	.001500	....	....	
11, 400	57, 000	.001300	.001300	....	....	
11, 600	58, 000	.008250	.001950	....	....	
11, 800	59, 000	.009250	.001000	....	....	
12, 000	60, 000	.010150	.000900	....	....	
12, 400	62, 000	.011150	.001000	....	....	
12, 800	64, 000	.012850	.001700	....	....	
13, 200	66, 000	.015000	.002150	....	....	
13, 600	68, 000	.016250	.001250	....	....	
14, 000	70, 000	.018500	.002250	....	....	
14, 400	72, 000	.021500	.003000	....	....	
14, 800	74, 000	.023300	.001800	....	....	
15, 200	76, 000	.025500	.002200	....	....	
15, 600	78, 000	.029000	.003500	....	....	
16, 000	80, 000	.031000	.002000	....	....	
16, 400	82, 000	.035000	.004000	....	....	
16, 800	84, 000	.038500	.003500	....	....	
17, 200	86, 000	.043200	.004700	....	....	
17, 600	88, 000	.051000	.007800	....	....	
18, 000	90, 000	.0550	.0040	....	....	
18, 400	92, 000	.0650	.0100	....	....	
18, 800	94, 000	.0850	.0200	....	....	
19, 200	96, 000	.1050	.0200	....	....	
19, 820	96, 600	.1500	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96, 600
Elastic limit per square inch of original section	do...	54, 000
Elongation per inch after rupture	inch..	0. 2500
Elongation per inch under strain at elastic limit	do ..	.002100
Reduction in diameter at point of rupture	do...	.145
Reduction in area after rupture, per centum of original section		49. 1
Position of rupture		″.65 from neck
Character of broken surface		silky
Elongation of inch sections		″.36, ″.14

No. 2279.

Marks, $^{32\ J_{26}}_{B\ T_1\ M}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000600	.000200	0.	....	
5, 000	25, 000	.000850	.000250	0.	....	
6, 000	30, 000	.001050	.000200	0.	....	
7, 000	35, 000	.001200	.000150	0.	....	
8, 000	40, 000	.001350	.000150	0.	....	
9, 000	45, 000	.001550	.000200	0.	....	
10, 000	50, 000	.001700	.000150	0.	....	
10, 200	51, 000	.001750	.000050	....	....	
10, 400	52, 000	.001800	.000050	....	....	
10, 600	53, 000	.001850	.000050	....	....	Elastic limit.
10, 800	54, 000	.002050	.000200	....	....	
11, 000	55, 000	.007600	.005550	....	....	
11, 200	56, 000	.008250	.000650	....	....	
11, 400	57, 000	.008750	.000500	....	....	
11, 600	58, 000	.009700	.000950	....	....	
11, 800	59, 000	.010700	.001000	....	....	
12, 000	60, 000	.012000	.001300	....	....	
12, 400	62, 000	.013550	.001550	....	....	
12, 800	64, 000	.015500	.001950	....	....	
13, 200	66, 000	.017450	.001950	....	....	
13, 600	68, 000	.019150	.001700	....	....	
14, 000	70, 000	.021250	.002100	....	....	
14, 400	72, 000	.023500	.002250	....	....	
14, 800	74, 000	.026550	.003050	....	....	
15, 200	76, 000	.029250	.002700	....	....	
15, 600	78, 000	.032000	.002750	....	....	
16, 000	80, 000	.035600	.003600	....	....	
16, 400	82, 000	.040000	.004400	....	....	
16, 800	84, 000	.045000	.005000	....	....	
17, 200	86, 000	.050500	.005500	....	....	
17, 600	88, 000	.0600	.0095	....	....	
18, 000	90, 000	.0700	.0100	....	....	
18, 400	92, 000	.0900	.0200	....	....	
18, 800	94, 000	.1500	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	94, 000
Elastic limit per square inch of original section	do...	53, 000
Elongation per inch after rupture	inch..	0. 2600
Elongation per inch under strain at elastic limit	do...	.001850
Reduction in diameter at point of rupture	do...	.145
Reduction in area after rupture, per centum of original section		49. 1
Position of rupture		".85 from neck
Character of broken surface		silky
Elongation of inch sections		".36*, ".16

No. 635.

Marks, $\frac{32\ J_4}{B\ T_3\ M}$
Length, 4″.506.
Diameter, ″.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000133	.000133	0.	....	
5, 000	10, 000	.000233	.000100	0.	....	
7, 500	15, 000	.000400	.000167	0.	....	
10, 000	20, 000	.000600	.000200	.000033	.000033	
12, 500	25, 000	.000767	.000167	.000033	0.	
15, 000	30, 000	.000933	.000166	.000033	0.	
17, 500	35, 000	.001133	.000200	.000033	0.	
20, 000	40, 000	.001333	.000200	.000033	0.	
22, 500	45, 000	.001500	.000167	.000033	0.	
25, 000	50, 000	.001667	.000167	.000033	0.	
25, 500	51, 000	.001700	.000033	....	....	
26, 000	52, 000	.001767	.000067	....	....	
26, 500	53, 000	.001800	.000033	....	....	
27, 000	54, 000	.001867	.000067	....	....	
27, 500	55, 000	.001967	.000100	.000067	.000034	
28, 000	56, 000	.002000	.000033	....	....	Elastic limit.
28, 500	57, 000	.002167	.000167	....	....	
29, 000	58, 000	.004433	.002266	....	....	
29, 500	59, 000	.006667	.002234	....	....	
30, 000	60, 000	.008300	.001633	....	....	
47, 250	94, 500	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds..	56, 00
Compression per inch under stress at elastic limit ....inch..	0. 00200
Ultimate strength per square inch of original section ... . pounds..	94, 50
Manner of failure	triple flexur

SPECIMENS FROM STEEL TRUNNION HOOPS

FOR

3".2 STEEL B. L. RIFLES.

No. 635.

Marks, $\genfrac{}{}{0pt}{}{32\,J_{25}}{B\,T_{3}\,M}$
Length, 4″.506.
Diameter, ″.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000133	.000133	0.	....	
5,000	10,000	.000233	.000100	0.	....	
7,500	15,000	.000400	.000167	0.	....	
10,000	20,000	.000600	.000200	.000033	.000033	
12,500	25,000	.000767	.000167	.000033	0.	
15,000	30,000	.000933	.000166	.000033	0.	
17,500	35,000	.001133	.000200	.000033	0.	
20,000	40,000	.001833	.000200	.000033	0.	
22,500	45,000	.001500	.000167	.000033	0.	
25,000	50,000	.001667	.000167	.000033	0.	
25,500	51,000	.001700	.000033	....	....	
26,000	52,000	.001767	.000067	....	. ...	
26,500	53,000	.001800	.000033	....	....	
27,000	54,000	.001867	.000067	....	... ...	
27,500	55,000	.001967	.000100	.000067	.000034	
28,000	56,000	.002000	.000033	....	....	Elastic limit.
28,500	57,000	.002167	.000167	....	....	
29,000	58,000	.004433	.002266	....	....	
29,500	59,000	.006667	.002234	....	....	
30,000	60,000	.008300	.001633	....	....	
47,250	94,500	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section .... pounds.. 56,00
Compression per inch under stress at elastic limit .... inch.. 0.00200
Ultimate strength per square inch of original section ... . pounds.. 94,50
Manner of failure .... triple flexur

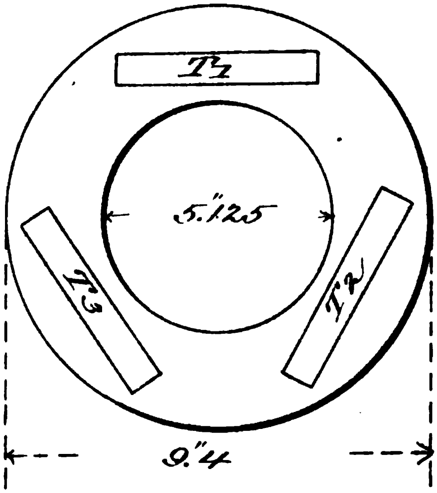
SPECIMENS FROM STEEL TRUNNION HOOPS

FOR

3″.2 STEEL B. L. RIFLES.

Trunnion Hoop 3.2" Rifle.

General drawing showing positions from whence specimens were taken.



SPECIMENS FROM STEEL TRUNNION HOOPS FOR 3″.2 STEEL B. L. RIFLES.

No. 2051.

Marks, $^{32}\,{}^{\mathrm{T\,H_1}}_{\mathrm{T_1}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000250	.000100	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000600	.000200	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000900	.000150	0.	....	
7, 000	35, 000	.001100	.000200	0.	....	
7, 200	36, 000	.001150	.000050	....	....	
7, 400	37, 000	.001150	0.	....	....	
7, 600	38, 000	.001200	.000050	....	....	
7, 800	39, 000	.001250	.000050	....	....	
8, 000	40, 000	.001300	.000050	0.	....	
8, 200	41, 000	.001350	.000050	....	....	
8, 400	42, 000	.001400	.000050	....	....	
8, 600	43, 000	.001450	.000050	....	....	
8, 800	44, 000	.001500	.000050	....	....	
9, 000	45. 000	.001550	.000050	0.	....	
9, 200	46, 000	.001600	.000050	....	....	
9, 400	47, 000	.001650	.000050	....	....	Elastic limit.
9, 600	48, 000	.001800	.000150	....	....	
9, 800	49, 000	.001950	.000150	....	....	
10, 000	50, 000	.002550	.000600	.000800	.000800	
10, 200	51, 000	.003350	.000800	....	....	
10, 400	52, 000	.004100	.000750	....	....	
10, 600	53, 000	.004900	.000800	....	....	
10, 800	54, 000	.006200	.001300	....	....	
11, 000	55, 000	.006600	.000400	....	....	
11, 200	56, 000	.007350	.000750	....	....	
11, 400	57, 000	.008350	.001000	....	....	
11, 600	58, 000	.009350	.001000	....	....	
11, 800	59, 000	.010100	.000750	....	....	
12, 000	60, 000	.011100	.001000	....	....	
12, 400	62, 000	.013150	.002050	....	....	
12, 800	64, 000	.014950	.001800	....	....	
13, 200	66, 000	.017100	.002150	....	....	
13, 600	68, 000	.019250	.002150	....	....	
14, 000	70, 000	.021500	.002250	....	....	
14, 400	72, 000	.024500	.003000	....	....	
14, 800	74, 000	.027500	.003000	....	....	
15, 200	76, 000	.030600	.003100	....	....	
15, 600	78, 000	.034050	.003450	....	....	
16, 000	80, 000	.038000	.003950	....	....	
16, 400	82, 000	.042500	.004500	....	....	
16, 800	84, 000	.048000	.005500	....	....	
17, 200	86, 000	.054900	.006900	....	....	
17, 600	88, 000	.063500	.008600	....	....	
18, 000	90, 000	.0800	.0165	....	....	
18, 080	90, 400	....	....	....	....	Tensile strength.

General summary.

Specific gravity	7. 8754
Tensile strength per square inch of original section .... pounds..	90, 400
Elastic limit per square inch of original section .... do...	47, 000
Elongation per inch after rupture .... inch..	0. 0850
Elongation per inch under strain at elastic limit .... do...	.001650
Reduction in diameter at point of rupture .... do...	.015
Reduction in area after rupture, per centum of original section	5. 7
Position of rupture	at neck
Character of broken surface	granular
Elongation of inch sections	″.09*, ″.08

No. 2052.

Marks, $^{32}\frac{\text{T H}_1}{\text{T}_2}$

Diameter, ″.505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000050	.000050	0.	....	
2, 000	10, 000	.000150	.000100	0.	....	
3, 000	15, 000	.000250	.000100	0.	....	
4. 90	20, 000	.000400	.000150	0.	....	
5, 000	25, 000	.000600	.000200	0.	....	
6, 000	30, 000	.000750	.000150	0.	....	
7, 000	35, 000	.000900	.000150	0.	....	
8, 000	40, 000	.001100	.000200	0.	....	
8, 200	41, 000	.001150	.000050	....	....	
8, 400	42, 000	.001200	.000050	....	....	
8, 600	43, 000	.001200	0.	....	....	
8, 800	44, 000	.001250	.000050	....	....	
9, 000	45, 000	.001300	.000050	0.	....	
9, 200	46, 000	.001300	0.	....	....	
9, 400	47, 000	.001400	.000100	....	....	
9, 600	48, 000	.001450	.000050	....	....	Elastic limit.
9, 800	49, 000	.001600	.000150	.....	....	
10, 000	50, 000	.002600	.001000	.001050	.001050	
10, 200	51, 000	.003700	.001100	....	....	
10, 400	52, 000	.004300	.000600	....	....	
10, 600	53, 000	.005300	.001000	....	....	
10, 800	54, 000	.006150	.000850	....	....	
11, 000	55, 000	.007100	.000950	....	....	
11, 200	56, 000	.008100	.001000	....	....	
11, 400	57, 000	.008850	.000750	....	....	
11, 600	58, 000	.009650	.000800	....	....	
11, 800	59, 000	.010000	.000950	....	....	
12, 000	60, 000	.011600	.001000	....	....	
12, 400	62, 000	.013750	.002150	....	....	
12, 800	64, 000	.015600	.001850	....	....	
13, 200	66, 000	.017600	.002000	....	....	
13, 600	68, 000	.020100	.002500	....	....	
14, 000	70, 000	.022600	.002500	....	....	
14, 400	72, 000	.025150	.002550	....	....	
14, 800	74, 000	.02-050	.002900	....	....	
15, 200	76, 000	.032100	.004050	....	....	
15, 600	78, 000	.034750	.002650	....	....	
16, 000	80, 000	.039000	.004250	....	....	
16, 400	82, 000	.044000	.005000	....	....	
16, 800	84, 000	.019750	.005750	....	....	
17, 200	86, 000	.057050	.007300	....	....	
17, 600	88, 000	.067500	.010450	....	....	
18, 000	90, 000	.0850	.0175	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 90, 000
Elastic limit per square inch of original section ....do... 48, 000
Elongation per inch after rupture ....inch.. 0. 0950
Elongation per inch under strain at elastic limit ....do... .001450
Reduction in diameter at point of rupture ....do .. .015
Reduction in area after rupture, per centum of original section 5. 7
Position of rupture .... ″.17 from neck
Character of broken surface ....granular; surface cracks in stem
Elongation of inch sections....................″.11*, ″.08

No. 2053.

Marks, $^{32}{}^{T\ H_1}_{T_3}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000050	.000050	0.	....	
2, 000	10, 000	.000150	.000100	0.	....	
3, 000	15, 000	.000250	.000100	0.	....	
4, 000	20, 000	.000450	.000200	0.	....	
5, 000	25, 000	.000650	.000200	0.	....	
6, 000	30, 000	.000800	.000150	0.	....	
7, 000	35, 000	.000950	.000150	0.	....	
8, 000	40, 000	.001100	.000150	— .000050	— .000050	
8, 200	41, 000	.001100	0.	....	....	
8, 400	42, 000	.001150	.000050	....	....	
8, 600	43, 000	.001200	.000050	....	....	
8, 800	44, 000	.001250	.000050	....	....	
9, 000	45, 000	.001300	.000050	.000000	.000050	
9, 200	46, 000	.001350	.000050	....	....	
9, 400	47, 000	.001400	.000050	....	....	
9, 600	48, 000	.001450	.000050	....	....	
9, 800	49, 000	.001500	.000050	....	....	
10, 000	50, 000	.001550	.000050	.000150	.000150	Elastic limit.
10, 200	51, 000	.002500	.000950	....	....	
10, 400	52, 000	.003600	.001100	....	....	
10, 600	53, 000	.004650	.001050	....	....	
10, 800	54, 000	.005800	.001150	....	....	
11, 000	55, 000	.007000	.001200	....	....	
11, 200	56, 000	.007750	.000750	....	....	
11, 400	57, 000	.008350	.000600	....	....	
11, 600	58, 000	.009150	.000800	....	....	
11, 800	59, 000	.009950	.000800	....	....	
12, 000	60, 000	.010950	.001000	....	....	
12, 400	62, 000	.012900	.001950	....	....	
12, 800	64, 000	.015500	.002600	....	....	
13, 200	66, 000	.018000	.002500	....	....	
13, 600	68, 000	.020000	.002000	....	....	
14, 000	70, 000	.022500	.002500	....	....	
14, 400	72, 000	.024900	.002400	....	....	
14, 800	74, 000	.028050	.003150	....	....	
15, 200	76, 000	.031550	.003500	....	....	
15, 600	78, 000	.034500	.002950	....	....	
16, 000	80, 000	.039500	.005000	....	....	
16, 400	82, 000	.044500	.005000	....	....	
16, 800	84, 000	.049550	.005050	....	....	
17, 200	86, 000	.056750	.007200	....	....	
17, 600	88, 000	.065750	.009000	....	....	
18, 000	90, 000	.0850	.019250	....	....	
18, 280	91, 480	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	91, 480
Elastic limit per square inch of original section	do...	50, 000
Elongation per inch after rupture	inch..	0. 1200
Elongation per inch under strain at elastic limit	do...	.001550
Reduction in diameter at point of rupture	do...	.035
Reduction in area after rupture, per centum of original section		13. 2
Position of rupture		at middle of stem
Character of broken surface		granular; surface cracks in stem
Elongation of inch sections		″.13*, ″.11

NEW TRUNNION HOOP, No. 1.

No. 2374.

Marks, $^{32}\frac{\mathrm{T\,H}_1}{\mathrm{T}_4}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000900	.000200	0.	....	
7,000	35,000	.001000	.000100	0.	....	
8,000	40,000	.001200	.000200	0.	....	
9,000	45,000	.001350	.000150	0.	....	
10,000	50,000	.001550	.000200	0.	....	
10,200	51,000	.001550	0.	....	....	
10,400	52,000	.001600	.000050	....	....	
10,600	53,000	.001650	.000050	....	....	
10,800	54,000	.001750	.000100	....	....	Elastic limit.
11,000	55,000	.002500	.000750	....	....	
11,200	56,000	.003600	.001100	....	....	
11,400	57,000	.004650	.001050	....	....	
11,600	58,000	.005650	.001000	....	....	
11,800	59,000	.006600	.000950	....	....	
12,000	60,000	.007500	.000900	....	....	
12,400	62,000	.009000	.001500	....	....	
12,800	64,000	.010500	.001500	....	....	
13,200	66,000	.012350	.001850	....	....	
13,600	68,000	.014250	.001900	....	....	
14,000	70,000	.016050	.001800	....	....	
14,400	72,000	.017750	.001700	....	....	
14,800	74,000	.020000	.002250	....	....	
15,200	76,000	.021700	.001700	....	....	
15,600	78,000	.024250	.002550	....	....	
16,000	80,000	.027000	.002750	....	....	
16,400	82,000	.030050	.003050	....	....	
16,800	84,000	.032850	.002800	....	....	
17,200	86,000	.036150	.003300	....	....	
17,600	88,000	.040250	.004100	....	....	
18,000	90,000	.044800	.004550	....	....	
18,400	92,000	.051000	.006200	....	....	
18,800	94,000	.058500	.007500	....	....	
19,200	96,000	.0650	.0065	....	....	
19,600	98,000	.0800	.0150	....	....	
20,000	100,000	.1300	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	100,000
Elastic limit per square inch of original section	do...	54,000
Elongation per inch after rupture	inch..	0.1550
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.055
Reduction in area after rupture, per centum of original section		20.5
Position of rupture		⅜ inch from neck

Character of broken surface, granular; radiating from a point in the circumference; opened cracks in surface of stem.

Elongation of inch sections ....″.19*, ″.12

No. 2375.

Marks, $^{32}\frac{T\,H_1}{T_5}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000400	.000250	0.	....	
3, 000	15, 000	.000550	.000150	0.	....	
4, 000	20, 000	.000750	.000200	0.	....	
5, 000	25, 000	.000900	.000150	0.	....	
6, 000	30, 000	.001050	.000150	0.	....	
7, 000	35, 000	.001250	.000200	....	....	
8, 000	40, 000	.001400	.000150	....	....	
9, 000	45, 000	.001550	.000150	....	....	
10, 000	50, 000	.001750	.000200	....	....	
10, 200	51, 000	.001800	.000050	....	....	
10, 400	52, 000	.001850	.000050	....	....	
10, 600	53, 000	.001850	0.	....	....	
10, 800	54, 000	.001900	.000050	....	....	
11, 000	55, 000	.001950	.000050	....	....	Elastic limit.
11, 200	56, 000	.003950	.002000	....	....	
11, 400	57, 000	.004950	.001000	....	....	
11, 600	58, 000	.005950	.001000	....	....	
11, 800	59, 000	.007000	.001050	....	....	
12, 000	60, 000	.008000	.001000	....	....	
12, 400	62, 000	.009500	.001500	....	....	
12, 800	64, 000	.011250	.001750	....	....	
13, 200	66, 000	.013050	.001800	....	....	
13, 600	68, 000	.015000	.001950	....	....	
14, 000	70, 000	.017000	.002000	....	....	
14, 400	72, 000	.018750	.001750	....	....	
14, 800	74, 000	.020650	.001900	....	....	
15, 200	76, 000	.023050	.002400	....	....	
15, 600	78, 000	.025650	.002600	....	....	
16, 000	80, 000	.028250	.002600	....	....	
16, 400	82, 000	.031050	.002800	....	....	
16, 800	84, 000	.034500	.003450	....	....	
17, 200	86, 000	.038000	.003500	....	....	
17, 600	88, 000	.043500	.005500	....	....	
18, 000	90, 000	.048000	.004500	....	....	
18, 400	92, 000	.054000	.006000	....	....	
18, 800	94, 000	.0650	.0110	....	....	
19, 200	96, 000	.0750	.0100	....	....	
19, 580	97, 900	.1050	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	97, 900
Elastic limit per square inch of original section	do...	55, 000
Elongation per inch after rupture	inch..	0. 2100
Elongation per inch under strain at elastic limit	do...	.001950
Reduction in diameter at point of rupture	do...	.155
Reduction in area after rupture, per centum of original section		51. 9
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		".32*, ".10

NEW TRUNNION HOOP, No. 1.

No. 2374.

Marks, $^{32}\frac{T\,H_1}{T_4}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.		
2, 000	10, 000	.000250	.000150	0.		
3, 000	15, 000	.000400	.000150	0.		
4, 000	20, 000	.000550	.000150	0.		
5, 000	25, 000	.000700	.000150	0.		
6, 000	30, 000	.000900	.000200	0.		
7, 000	35, 000	.001000	.000100	0.		
8, 000	40, 000	.001200	.000200	0.		
9, 000	45, 000	.001350	.000150	0.		
10, 000	50, 000	.001550	.000200	0.		
10, 200	51, 000	.001550	0.			
10, 400	52, 000	.001600	.000050			
10, 600	53, 000	.001650	.000050			
10, 800	54, 000	.001750	.000100			Elastic limit.
11, 000	55, 000	.002500	.000750			
11, 200	56, 000	.003600	.001100			
11, 400	57, 000	.004650	.001050			
11, 600	58, 000	.005650	.001000			
11, 800	59, 000	.006600	.000950			
12, 000	60, 000	.007500	.000900			
12, 400	62, 000	.009000	.001500			
12, 800	64, 000	.010500	.001500			
13, 200	66, 000	.012350	.001850			
13, 600	68, 000	.014250	.001900			
14, 000	70, 000	.016050	.001800			
14, 400	72, 000	.017750	.001700			
14, 800	74, 000	.020000	.002250			
15, 200	76, 000	.021700	.001700			
15, 600	78, 000	.024250	.002550			
16, 000	80, 000	.027000	.002750			
16, 400	82, 000	.030050	.003050			
16, 800	84, 000	.032850	.002800			
17, 200	86, 000	.036150	.003300			
17, 600	88, 000	.040250	.004100			
18, 000	90, 000	.044800	.004550			
18, 400	92, 000	.051000	.006200			
18, 800	94, 000	.058500	.007500			
19, 200	96, 000	.0650	.0065			
19, 600	98, 000	.0800	.0150			
20, 000	100, 000	.1300	.0500			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	100, 000
Elastic limit per square inch of original section	do...	54, 000
Elongation per inch after rupture	inch..	0. 1550
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.055
Reduction in area after rupture, per centum of original section		20. 5
Position of rupture		[illegible] inch from neck

Character of broken surface, granular; radiating from a point in the circumference; opened cracks in surface of stem.

Elongation of inch sections ″.19*, ″.12

No. 2375.

Marks, $^{32\,\mathrm{T\,H_1}}_{\mathrm{T_1}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000400	.000250	0.	....	
3, 000	15, 000	.000550	.000150	0.	....	
4, 000	20, 000	.000750	.000200	0.	....	
5, 000	25, 000	.000900	.000150	0.	....	
6, 000	30, 000	.001050	.000150	0.	....	
7, 000	35, 000	.001250	.000200	....	....	
8, 000	40, 000	.001400	.000150	....	....	
9, 000	45, 000	.001550	.000150	....	....	
10, 000	50, 000	.001750	.000200	....	....	
10, 200	51, 000	.001800	.000050	....	....	
10, 400	52, 000	.001850	.000050	....	....	
10, 600	53, 000	.001850	0.	....	....	
10, 800	54, 000	.001900	.000050	....	....	
11, 000	55, 000	.001950	.000050	....	....	Elastic limit.
11, 200	56, 000	.003950	.002000	....	....	
11, 400	57, 000	.004950	.001000	....	....	
11, 600	58, 000	.005950	.001000	....	....	
11, 800	59, 000	.007000	.001050	....	....	
12, 000	60, 000	.008000	.001000	....	....	
12, 400	62, 000	.009500	.001500	....	....	
18, 800	64, 000	.011250	.001750	....	....	
13, 200	66, 000	.013050	.001800	....	....	
13, 600	68, 000	.015000	.001950	....	....	
14, 000	70, 000	.017000	.002000	....	....	
14, 400	72, 000	.018750	.001750	....	....	
14, 800	74, 000	.020650	.001900	....	....	
15, 200	76, 000	.023050	.002400	....	....	
15, 600	78, 000	.025650	.002600	....	....	
16, 000	80, 000	.028250	.002600	....	....	
16, 400	82, 000	.031050	.002800	....	....	
16, 800	84, 000	.034500	.003450	....	....	
17, 200	86, 000	.038000	.003500	....	....	
17, 600	88, 000	.043500	.005500	....	....	
18, 000	90, 000	.048000	.004500	....	....	
18, 400	92, 000	.054000	.006000	....	....	
18, 800	94, 000	.0650	.0110	....	....	
19, 200	96, 000	.0750	.0100	....	....	
19, 580	97, 900	.1050	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section............pounds..	97, 900
Elastic limit per square inch of original section............do...	55, 000
Elongation per inch after rupture............inch..	0. 2100
Elongation per inch under strain at elastic limit............do...	.001950
Reduction in diameter at point of rupture............do...	.155
Reduction in area after rupture, per centum of original section............	51. 9
Position of rupture............	¾ inch from neck
Character of broken surface............	silky
Elongation of inch sections............	″.32*, ″.10

No. 2376.

Marks, $^{32}\frac{\mathrm{TH}_1}{\mathrm{T}_4}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001050	.000200	0.	....	
8,000	40,000	.001200	.000150	0.	....	
9,000	45,000	.001350	.000150	....	....	
10,000	50,000	.001550	.000200	....	....	
11,000	55,000	.001750	.000200	....	....	
11,200	56,000	.001800	.000050	....	....	Elastic limit.
11,400	57,000	.002550	.000750	....	....	
11,600	58,000	.003950	.001400	....	....	
11,800	59,000	.004950	.001000	....	....	
12,000	60,000	.005900	.000950	....	....	
12,400	62,000	.007950	.002050	....	....	
12,800	64,000	.009350	.001400	....	....	
13,200	66,000	.011250	.001900	....	....	
13,600	68,000	.013100	.001850	....	....	
14,000	70,000	.014750	.001650	....	....	
14,400	72,000	.016750	.002000	....	....	
14,800	74,000	.018500	.001750	....	....	
15,200	76,000	.020600	.002100	....	....	
15,600	78,000	.023000	.002400	....	....	
16,000	80,000	.025600	.002600	....	....	
16,400	82,000	.028500	.002900	....	....	
16,800	84,000	.031500	.003000	....	....	
17,200	86,000	.034750	.003250	....	....	
17,600	88,000	.038500	.003750	....	....	
18,000	90,000	.043400	.004900	....	....	
18,400	92,000	.048000	.004600	....	....	
18,800	94,000	.053500	.005500	....	....	
19,200	96,000	.0650	.0115	....	....	
19,600	98,000	.0750	.0100	....	....	
20,000	100,000	.0950	.0200	....	....	
20,220	101,100	.1350	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	101,100
Elastic limit per square inch of original section	do...	56,000
Elongation per inch after rupture	inch..	0.1600
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.075
Reduction in area after rupture, per centum of original section		27.4
Position of rupture		⅜ inch from neck
Character of broken surface, granular; dull center and spot at circumference; opened cracks in surface of stem.		
Elongation of inch sections		′.20*, ″.12

No. 2218.

Marks, $^{32}\frac{T\,H_{1}}{T_{1}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000450	.000200	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000800	.000200	0.	....	
6, 000	30, 000	.001000	.000200	0.	....	
7, 000	35, 000	.001200	.000200	0.	....	
8, 000	40, 000	.001350	.000150	0.	....	
9, 000	45, 000	.001550	.000200	0.	....	
10, 000	50, 000	.001800	.000250	0.	....	
10, 200	51, 000	.001800	0.	....	....	
10, 400	52, 000	.001850	.000050	....	....	Elastic limit.
10, 600	53, 000	.002150	.000300	....	....	
10, 800	54, 000	.003000	.000850	....	....	
11, 000	55, 000	.005000	.002000	....	....	
11, 200	56, 000	.007000	.002000	....	....	
11, 400	57, 000	.008500	.001500	....	....	
11, 600	58, 000	.009600	.001100	....	....	
11, 800	59, 000	.010350	.000750	....	....	
12, 000	60, 000	.011300	.000950	....	....	
12, 400	62, 000	.013050	.001750	....	....	
12, 800	64, 000	.015000	.001950	....	....	
13, 200	66, 000	.017050	.002050	....	....	
13, 600	68, 000	.019800	.002750	....	....	
14, 000	70, 000	.022500	.002700	....	....	
14, 400	72, 000	.025500	.003000	....	....	
14, 800	74, 000	.028000	.002500	....	....	
15, 200	76, 000	.030100	.002100	....	....	
15, 600	78, 000	.034000	.003900	....	....	
16, 000	80, 000	.038000	.004000	....	....	
16, 400	82, 000	.043000	.005000	....	....	
16, 800	84, 000	.049000	.006000	....	....	
17, 200	86, 000	.056000	.007000	....	....	
17, 600	88, 000	.066250	.010250	....	....	
18, 000	90, 000	.0850	.018750	....	....	
18, 370	91, 850	.1200	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	91, 850
Elastic limit per square inch of original section.................................do...	52, 000
Elongation per inch after rupture...inch..	0. 1400
Elongation per inch under strain at elastic limit..................................do ..	.001850
Reduction in diameter at point of rupture ....do...	.045
Reduction in area after rupture, per centum of original section	16. 9

Position of rupture ....″.1 from middle of stem
Character of broken surface...granular; dull spot at circumference; opened cracks in surface of stem
Elongation of inch sections...″.16*, ″.12

No. 2219.

Marks, $^{32}\frac{T\,H_2}{T_2}$.
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000550	.000200	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001050	.000200	0.	....	
8,000	40,000	.001200	.000150	0.	....	
9,000	45,000	.001350	.000150	0.	....	
10,000	50,000	.001600	.000250	0.	....	
10,200	51,000	.001600	0.	....	....	
10,400	52,000	.001650	.000050	....	....	
10,600	53,000	.001700	.000050	....	....	
10,800	54,000	.001750	.000050	....	....	Elastic limit.
11,000	55,000	.010700	.008950	....	....	
11,200	56,000	.011650	.000950	....	....	
11,400	57,000	.012250	.000600	....	....	
11,600	58,000	.013250	.001000	....	....	
11,800	59,000	.014350	.001100	....	....	
12,000	60,000	.015500	.001150	....	....	
12,400	62,000	.017850	.002350	....	....	
12,800	64,000	.020100	.002250	....	....	
13,200	66,000	.023000	.002900	....	....	
13,600	68,000	.025750	.002750	....	....	
14,000	70,000	.029000	.003250	....	....	
14,400	72,000	.032450	.003450	....	....	
14,800	74,000	.036400	.003950	....	....	
15,200	76,000	.040600	.004200	....	....	
15,600	78,000	.046550	.005950	....	....	
16,000	80,000	.053500	.006950	....	....	
16,400	82,000	.062000	.008500	....	....	
16,800	84,000	.0800	.0180	....	....	
17,200	86,000	.1000	.0200	....	....	
17,510	87,550	.1500	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	87,550
Elastic limit per square inch of original section	do	54,000
Elongation per inch after rupture	inch	0.1150
Elongation per inch under strain at elastic limit	do	.001750
Reduction in diameter at point of rupture	do	.085
Reduction in area after rupture, per centum of original section		30.7
Position of rupture		″.1 from middle of stem
Character of broken surface		silky; small granular spot near center
Elongation of inch sections		″.25*, ″.14

No. 2220.

Marks, $^{32}\,{}^{T\ H_3}_{T_2}$
Diameter, ".504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000950	.000200	0.	....	
7, 000	35, 000	.001150	.000200	0.	....	
8, 000	40, 000	.001300	.000150	0.	....	
9, 000	45, 000	.001500	.000200	0.	....	
10, 000	50, 000	.001700	.000200	0.	....	
10, 200	51, 000	.001700	0.	....	....	
10, 400	52, 000	.001750	.000050	....	....	
10, 600	53, 000	.001800	.000050	....	....	
10, 800	54, 000	.001800 .007500	0. .005900	....	....	Elastic limit.
11, 000	55, 000	.008500	.001000	....	....	
11, 200	56, 000	.009350	.000850	....	....	
11, 400	57, 000	.010350	.001000	....	....	
11, 600	58, 000	.011250	.000900	....	....	
11, 800	59, 000	.012250	.001000	....	....	
12, 000	60, 000	.013500	.001250	....	....	
12, 400	62, 000	.015400	.001900	....	....	
12, 800	64, 000	.017550	.002150	....	....	
13, 200	66, 000	.020100	.002550	....	....	
13, 600	68, 000	.022650	.002550	....	....	
14, 000	70, 000	.025600	.002950	....	....	
14, 400	72, 000	.028600	.003000	....	....	
14, 800	74, 000	.031900	.003400	....	....	
15, 200	76, 000	.036600	.004700	....	....	
15, 600	78, 000	.041000	.004400	....	....	
16, 000	80, 000	.046250	.005250	....	....	
16, 400	82, 000	.053000	.006750	....	....	
16, 800	84, 000	.061750	.008750	....	....	
17, 200	86, 000	.0750	.013250	....	....	
17, 500	87, 500	.1000	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	87, 500
Elastic limit per square inch of original section	do	54. 000
Elongation per inch after rupture	inch	0. 1050
Elongation per inch under strain at elastic limit	do	.001800
Reduction in diameter at point of rupture	do	.034
Reduction in area after rupture, per centum of original section		13. 2
Position of rupture		".40 from neck
Character of broken surface		granular; dull spot at circumference; opened cracks in surface of stem
Elongation of inch sections		".08, ".13*

NEW TRUNNION HOOP, No. 2.

No. 2510.

Marks, $^{32}\mathrm{T}^{\mathrm{H}_2}_{\mathrm{T}_4}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000200	.000200	0.	....	
2, 000	10, 000	.000300	.000100	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000700	.000250	0.	....	
5, 000	25, 000	.000850	.000150	0.	....	
6, 000	30, 000	.001000	.000150	0.	....	
7, 000	35, 000	.001200	.000200	0.	....	
8, 000	40, 000	.001400	.000200	0.	....	
9, 000	45, 000	.001600	.000200	....	....	
10, 000	50, 000	.001700	.000100	....	....	
10, 200	51, 000	.001750	.000050	....	....	
10, 400	52, 000	.001800	.000050	....	....	
10, 600	53, 000	.001900	.000100	....	....	Elastic limit.
10, 800	54, 000	.002600	.000700	....	....	
11, 000	55, 000	.003100	.000500	....	....	
11, 200	56, 000	.004300	.001200	....	....	
11, 400	57, 000	.005100	.000800	....	....	
11, 600	58, 000	.005850	.000750	....	....	
11, 800	59, 000	.006700	.000850	....	....	
12, 000	60, 000	.007750	.001050	....	....	
12, 400	62, 000	.009750	.002000	....	....	
12, 800	64, 000	.011750	.002000	....	....	
13, 200	66, 000	.014000	.002250	....	....	
13, 600	68, 000	.015650	.001650	....	....	
14, 000	70, 000	.017550	.001900	....	....	
14, 400	72, 000	.019750	.002200	....	....	
14, 800	74, 000	.022150	.002400	....	....	
15, 200	76, 000	.024500	.002350	....	....	
15, 600	78, 000	.027200	.002700	....	....	
16, 000	80, 000	.030400	.003200	....	....	
16, 400	82, 000	.034000	.003600	....	....	
16, 800	84, 000	.037350	.003350	....	....	
17, 200	86, 000	041560	.004150	....	....	
17, 600	88, 000	.047250	.005750	....	....	
18, 000	90, 000	.0550	.007750	....	....	
18, 400	92, 000	.0600	.0050	....	....	
18, 800	94, 000	.0750	.0150	....	....	
19, 180	95, 900	.1100	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	95, 900
Elastic limit per square inch of original section ....do...	53, 000
Elongation per inch after rupture........................inch..	0. 1550
Elongation per inch under strain at elastic limit........................do...	.001900
Reduction in diameter at point of rupture........................do...	.125
Reduction in area after rupture, per centum of original section........................	43. 3
Position of rupture	″.45 from neck
Character of broken surface........................	granular; dull spot at circumference
Elongation of inch sections	″.24*, ″.70

No. 2511.

Marks, $^{32}\,\overset{T\ H_2}{T_5}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000700	.000250	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.001100	.000250	0.	....	
7,000	35,000	.001300	.000200	0.	....	
8,000	40,000	.001450	.000150	0.	....	
9,000	45,000	.001600	.000150	....	....	
10,000	50,000	.001750	.000150	....	....	
10,200	51,000	.001800	.000050	....	....	
10,400	52,000	.001800	0.	....	....	
10,600	53,000	.001850	.000050	....	....	
10,800	54,000	.001900	.000050	....	....	
11,000	55,000	.001950	.000050	....	....	
11,200	56,000	.002050	.000100	....	....	
11,400	57,000	.002100	.000050	....	....	
11,600	58,000	.002200	.000100	....	....	Elastic limit.
11,800	59,000	.002450	.000250	....	....	
12,000	60,000	.003150	.000700	....	....	
12,400	62,000	.005050	.001900	....	....	
12,800	64,000	.006700	.001650	....	....	
13,200	66,000	.008600	.001900	....	....	
13,600	68,000	.010350	.001750	....	....	
14,000	70,000	.012300	.001950	....	....	
14,400	72,000	.015000	.002700	....	....	
14,800	74,000	.016750	.001750	....	....	
15,200	76,000	.017900	.001150	....	....	
15,600	78,000	.019500	.001600	....	....	
16,000	80,000	.022400	.002900	....	....	
16,400	82,000	.025250	.002850	....	....	
16,800	84,000	.027550	.002300	....	....	
17,200	86,000	.030600	.003050	....	....	
17,600	88,000	.034000	.003400	....	....	
18,000	90,000	.037750	.003750	....	....	
18,400	92,000	.042250	.004500	....	....	
18,800	94,000	.046500	.004250	....	....	
19,200	96,000	.0550	.0085	....	....	
19,600	98,000	.0600	.0050	....	....	
20,000	100,000	.0650	.0050	....	....	
20,400	102,000	.1000	.0350	....	....	
20,420	102,100	.1200	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 102,100
Elastic limit per square inch of original section ....do... 58,000
Elongation per inch after rupture ....inch.. 0.1450
Elongation per inch under strain at elastic limit ....do... .002200
Reduction in diameter at point of rupture ....do... .065
Reduction in area after rupture, per centum of original section 23.9
Position of rupture .... ⅝ inch from neck
Character of broken surface ....granular; dull spot at circumference
Elongation of inch sections............″.20*, ″.09

No. 2512.

Marks, $^{32}\,\frac{\mathrm{T\ H_2}}{\mathrm{T_4}}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000350	.000200	0.	....	
3, 000	15, 000	.000450	.000100	0.	....	
4, 000	20, 000	.000650	.000200	0.	....	
5, 000	25, 000	.000750	.000100	0.	....	
6, 000	30, 000	.001000	.000250	0.	....	
7, 000	35, 000	.001100	.000100	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001350	.000100	....	....	
10, 000	50, 000	.001600	.000250	....	....	
10, 200	51, 000	.001650	.000050	....	....	
10, 400	52, 000	.001700	.000059	....	....	
10, 600	53, 000	.001750	.000050	....	....	
10, 800	54, 000	.001800	.000050	....	....	
11, 000	55, 000	.001850	.000050	....	....	Elastic limit.
11, 200	56, 000	.002100	.000250	....	....	
11, 400	57, 000	.002700	.000600	....	....	
11, 600	58, 000	.003750	.001050	....	....	
11, 800	59, 000	.004600	.000850	....	....	
12, 000	60, 000	.005600	.001000	....	....	
12, 400	62, 000	.007550	.001950	....	....	
12, 800	64, 000	.009000	.001450	....	....	
13, 200	66, 000	.011000	.002000	....	....	
13, 600	68, 000	.012500	.001500	....	....	
14, 000	70, 000	.014600	.002100	....	....	
14, 400	72, 000	.016550	.001950	....	....	
14, 800	74, 000	.018750	.002200	....	....	
15, 200	76, 000	.020750	.002000	....	....	
15, 600	78, 000	.023250	.002500	....	....	
16, 000	80, 000	.025850	.002600	....	....	
16, 400	82, 000	.029000	.003150	....	....	
16, 800	84, 000	.032000	.003000	....	....	
17, 200	86, 000	.036000	.004000	....	....	
17, 600	88, 000	.040000	.004000	....	....	
18, 000	90, 000	.044750	.004750	....	....	
18, 400	92, 000	.0500	.005250	....	....	
18, 800	94, 000	.0550	.0050	....	....	
19, 200	96, 000	.0650	.0100	....	....	
19, 600	98, 000	.0950	.0300	....	....	
19, 740	98, 700	.1100	.0150	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98, 700
Elastic limit per square inch of original section	do ..	55, 000
Elongation per inch after rupture	inch ..	0. 2050
Elongation per inch under strain at elastic limit	do ...	.001850
Reduction in diameter at point of rupture	do ...	.145
Reduction in area after rupture, per centum of original section		49. 1
Position of rupture		".17 from neck
Character of broken surface		silky
Elongation of inch sections		".17, ".24

No. 2282.

Marks, $^{32}\frac{\mathrm{T\,H}_3}{\mathrm{T}_1}$
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.		
2,000	10,000	.000250	.000150	0.		
3,000	15,000	.000400	.000150	0.		
4,000	20,000	.000500	.000100	0.		
5,000	25,000	.000650	.000150	0.		
6,000	30,000	.000800	.000150	0.		
7,000	35,000	.000950	.000150	0.		
8,000	40,000	.001150	.000200	0.		
9,000	45,000	.001350	.000200	0.		
10,000	50,000	.001500	.000200	0.		
10,200	51,000	.001600	.000050			
10,400	52,000	.001650	.000050			Elastic limit.
10,600	53,000	.002100	.000450			
10,800	54,000	.002700	.000600			
11,000	55,000	.001000	.001300			
11,200	56,000	.004650	.000650			
11,400	57,000	.005500	.000850			
11,600	58,000	.006200	.000700			
11,800	59,000	.007100	.000900			
12,000	60,000	.008100	.001000			
12,400	62,000	.009600	.001500			
12,800	64,000	.011250	.001650			
13,200	66,000	.013200	.001950			
13,600	68,000	.015050	.001850			
14,000	70,000	.017000	.001950			
14,400	72,000	.019100	.002100			
14,800	74,000	.021200	.002100			
15,200	76,000	.023200	.002000			
15,600	78,000	.025500	.002300			
16,000	80,000	.028250	.002750			
16,400	82,000	.031250	.003000			
16,800	84,000	.035000	.003750			
17,200	86,000	.038 00	.003500			
17,600	88,000	.042750	.004250			
18,000	90,000	.047250	.004500			
18,400	92,000	.054500	.007250			
18,800	94,000	.0650	.0105			
19,200	96,000	.0850	.0200			
19,600	98,000	.1050	.0200			
19,650	98,250	.1300	.0250			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98,250
Elastic limit per square inch of original section	do...	52,000
Elongation per inch after rupture	inch..	0.1950
Elongation per inch under strain at elastic limit	do...	.001650
Reduction in diameter at point of rupture	do ..	.075
Reduction in area after rupture, per centum of original section		27.4
Position of rupture		¾ inch from neck

Character of broken surface; granular; dull spot at circumference; opened cracks in stem in vicinity of rupture.

Elongation of inch sections .... ''.25* ''.14

No. 2283.

Marks, $^{32}\frac{\mathrm{T\ H}_3}{\mathrm{T}_2}$
Diameter, ″.505.
Sectional area .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001100	.000200	0.	....	
8,000	40,000	.001300	.000200	0.	....	
9,000	45,000	.001450	.000150	0.	....	
10,000	50,000	.001600	.000150	0.	....	
10,200	51,000	.001650	.000050	....	....	
10,400	52,000	.001700	.000050	....	....	Elastic limit.
10,600	53,000	.001850	.000150	....	....	
10,800	54,000	.002700	.000850	....	....	
11,000	55,000	.003600	.000900	....	....	
11,200	56,000	.004600	.001000	....	....	
11,400	57,000	.005600	.001000	....	....	
11,600	58,000	.006350	.000750	....	....	
11,800	59,000	.007250	.000900	....	....	
12,000	60,000	.007800	.000550	....	....	
12,400	62,000	.009000	.001200	....	....	
12,800	64,000	.011000	.002000	....	....	
13,200	66,000	.012700	.001700	....	....	
13,600	68,000	.014600	.001900	....	....	
14,000	70,000	.016500	.001900	....	....	
14,400	72,000	.018500	.002000	....	....	
14,800	74,000	.020250	.001750	....	....	
15,200	76,000	.022450	.002200	....	....	
15,600	78,000	.024750	.002300	....	....	
16,000	80,000	.027500	.002750	....	....	
16,400	82,000	.030150	.002650	....	....	
16,800	84,000	.034000	.003850	....	....	
17,200	86,000	.037550	.003550	....	....	
17,600	88,000	.041750	.004200	....	....	
18,000	90,000	.047000	.005250	....	....	
18,400	92,000	.052750	.005750	....	....	
18,800	94,000	.0650	.012250	....	....	
19,200	96,000	.0750	.0100	....	....	
19,600	98,000	.0950	.0200	....	....	
19,660	98,300	.1150	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................................pounds.. 98,300
Elastic limit per square inch of original section....................................do... 52,000
Elongation per inch after rupture....................................inch.. 0.1950
Elongation per inch under strain at elastic limit....................................do... .001700
Reduction in diameter at point of rupture....................................do... .095
Reduction in area after rupture, per centum of original section.................................... 34.0
Position of rupture....................................″.95 from neck
Character of broken surface....................................granular; dull spot at circumference
Elongation of inch sections....................................″.25*, ″.14

No. 2284.

Marks, $^{32}{}^{\mathrm{T\,H_3}}_{\mathrm{T_1}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000400	.060150	0.	....	
4, 000	20, 000	.000600	.000200	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000900	.000150	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001250	.000200	0.	....	
9, 000	45, 000	.001350	.009100	0.	....	
10, 000	50, 000	.001550	.000200	0.	....	
10, 200	51, 000	.001650	.000100	....	....	Elastic limit.
10, 400	52, 000	.002050	.000400	....	....	
10, 600	53, 000	.002900	.000850	....	....	
10, 800	54, 000	.003750	.000850	....	....	
11, 000	55, 000	.004550	.000800	....	....	
11, 200	56, 000	.005300	.000750	....	....	
11, 400	57, 000	.006150	.000850	....	....	
11, 600	58, 000	.007000	.000850	....	....	
11, 800	59, 000	.007750	.000750	....	....	
12, 000	60, 000	.008650	.000900	....	....	
12, 400	62, 000	.010300	.001650	....	....	
12, 800	64, 000	.011750	.001450	....	....	
13, 200	66, 000	.013500	.001750	....	....	
13, 600	68, 000	.015600	.002100	....	....	
14, 000	70, 000	.017500	.001900	....	....	
14, 400	72, 000	.019300	.001800	....	....	
14, 800	74, 000	.021250	.001950	....	....	
15, 200	76, 000	.023500	.002250	....	....	
15, 600	78, 000	.026100	.002600	....	....	
16, 000	80, 000	.028650	.002550	....	....	
16, 400	82, 000	.032000	.003350	....	....	
16, 800	84, 000	.035000	.003000	....	....	
17, 200	86, 000	.039250	.004250	....	....	
17, 600	88, 000	.044000	.004750	....	....	
18, 000	90, 000	.049000	.005000	....	....	
18, 400	92, 000	.056000	.007000	....	....	
18, 800	94, 000	.0650	.0090	....	....	
19, 200	96, 000	.0800	.0150	....	....	
19, 600	98, 000	.1100	.0300	....	....	
19, 620	98, 100	.1300	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 98, 100
Elastic limit per square inch of original section..do... 51, 000
Elongation per inch after rupture ....inch.. 0. 1350
Elongation per inch under strain at elastic limit ....do... .001650
Reduction in diameter at point of rupture...do... .035
Reduction in area after rupture, per centum of original section 13. 2
Position of rupture...″.1 from neck
Character of broken surface ....granular; opened cracks in surface of stem
Elongation of inch sections...″.15*, ″.12

No. 2377.

Marks, $^{32}\overset{\mathrm{T\,H_4}}{\mathrm{T_1}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000200	.000200	0.	....	
2,000	10,000	.000450	.000250	0.	....	
3,000	15,000	.000700	.000250	0.	....	
4,000	20,000	.000900	.000200	0.	....	
5,000	25,000	.001050	.000150	0.	....	
6,000	30,000	.001200	.000150	0.	....	
7,000	35,000	.001350	.000150	0.	....	
8,000	40,000	.001500	.000150	0.	....	
9,000	45,000	.001700	.000200	....	....	
10,000	50,000	.001950	.000250	....	....	
10,200	51,000	.002050	.000100	....	....	Elastic limit.
10,400	52,000	.002200	.000150	....	....	
10,600	53,000	.002450	.000250	....	....	
10,800	54,000	.002800	.000350	....	....	
11,000	55,000	.003300	.000500	....	....	
11,200	56,000	.003900	.000600	....	....	
11,400	57,000	.004750	.000850	....	....	
11,600	58,000	.005400	.000650	....	....	
11,800	59,000	.006450	.001050	....	....	
12,000	60,000	.007350	.000900	....	....	
12,400	62,000	.008900	.001550	....	....	
12,800	64,000	.010250	.001350	....	....	
13,200	66,000	.011600	.001350	....	....	
13,600	68,000	.013250	.001650	....	....	
14,000	70,000	.015250	.002000	....	....	
14,400	72,000	.017250	.002000	....	....	
14,800	74,000	.018750	.001500	....	....	
15,200	76,000	.021000	.002250	....	....	
15,600	78,000	.023100	.002100	....	....	
16,000	80,000	.026000	.002900	....	....	
16,400	82,000	.028750	.002750	....	....	
16,800	84,000	.032000	.003250	....	....	
17,200	86,000	.035250	.003250	....	....	
17,600	88,000	.039500	.004250	....	....	
18,000	90,000	.044000	.004500	....	....	
18,400	92,000	.049350	.005350	....	....	
18,800	94,000	.051250	.006900	....	....	
19,200	96,000	.0650	.008750	....	....	
19,600	98,000	.0900	.0250	....	....	
19,920	99,600	.1250	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	99,600
Elastic limit per square inch of original section	do...	51,000
Elongation per inch after rupture	inch..	0.1600
Elongation per inch under strain at elastic limit	do...	.002050
Reduction in diameter at point of rupture	do...	.075
Reduction in area after rupture, per centum of original section		27.4
Position of rupture		¾ inch from neck
Character of broken surface, granular; dull spot at circumference; opened cracks in stem near point of rupture.		
Elongation of inch sections		″.11, ″.21*

No. 2378.

Marks, $^{32}\frac{T\,H_4}{T_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000200	.000200	.000100	.000100	
2,000	10,000	.000450	.000250	.000100	0.	
3,000	15,000	.000650	.000200	.000100	0.	
4,000	20,000	.000850	.000200	.000100	0.	
5,000	25,000	.001050	.000200	.000150	.000050	
6,000	30,000	.001300	.000250	.000150	0.	
7,000	35,000	.001450	.000150	....	....	
8,000	40,000	.001600	.000150	....	....	
9,000	45,000	.001800	.000200	....	....	
10,000	50,000	.002000	.000200	....	....	
10,200	51,000	.002100	.000100	....	....	Elastic limit.
10,400	52,000	.002400	.000300	....	....	
10,600	53,000	.003300	.000900	....	....	
10,800	54,000	.004500	.001200	....	....	
11,000	55,000	.005550	.001050	....	....	
11,200	56,000	.006100	.000550	....	....	
11,400	57,000	.007050	.000950	....	....	
11,600	58,000	.007850	.000800	....	....	
11,800	59,000	.008550	.000700	....	....	
12,000	60,000	.009400	.000850	....	....	
12,400	62,000	.011000	.001600	....	....	
12,800	64,000	.012400	.001400	....	....	
13,200	66,000	.014000	.001600	....	....	
13,600	68,000	.015600	.001600	....	....	
14,000	70,000	.017500	.001900	....	....	
14,400	72,000	.019550	.002050	....	....	
14,800	74,000	.022000	.002450	....	....	
15,200	76,000	.024350	.002350	....	....	
15,600	78,000	.026550	.002200	....	....	
16,000	80,000	.028550	.002000	....	....	
16,400	82,000	.031500	.002950	....	....	
16,800	84,000	.035000	.003500	....	....	
17,200	86,000	.038250	.003250	....	....	
17,600	88,000	.042250	.004000	....	....	
18,000	90,000	.047500	.005250	....	....	
18,400	92,000	.053750	.006250	....	....	
18,800	94,000	.0600	.006250	....	....	
19,200	96,000	.0700	.0100	....	....	
19,600	98,000	.0900	.0200	....	....	
19,860	99,300	.1300	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section........pounds.. 99,300
Elastic limit per square inch of original section........do... 51,000
Elongation per inch after rupture........inch.. 0.1800
Elongation per inch under strain at elastic limit........do... .002100
Reduction in diameter at point of rupture........do... .085
Reduction in area after rupture, per centum of original section........ 30.7
Position of rupture........″.80 from neck
Character of broken surface, granular; dull spot at circumference; opened cracks in surface of stem, near point of rupture.
Elongation of inch sections........″.12, ″.24*

No. 2379.

Marks, $^{32}\text{T}^{\text{H}_4}_{\text{T}_3}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001200	.000200	....	....	
8,000	40,000	.001400	.000200	....	....	
9,000	45,000	.001550	.000150	....	....	
10,000	50,000	.001750	.000200	....	....	
10,200	51,000	.001800	.000050	....	....	
10,400	52,000	.001850	.000050	....	....	
10,600	53,000	.001950	.000100	....	....	
10,800	54,000	.002050	.000100	....	....	Elastic limit.
11,000	55,000	.002300	.000250	....	....	
11,200	56,000	.002900	.000600	....	....	
11,400	57,000	.004050	.001150	....	....	
11,600	58,000	.004750	.000700	....	....	
11,800	59,000	.005250	.000500	....	....	
12,000	60,000	.006550	.001300	....	....	
12,400	62,000	.008300	.001750	....	....	
12,800	64,000	.010350	.002050	....	....	
13,200	66,000	.011750	.001400	....	....	
13,600	68,000	.013750	.002000	....	....	
14,000	70,000	.015900	.002150	....	....	
14,400	72,000	.017750	.001850	....	....	
14,800	74,000	.019750	.002000	....	....	
15,200	76,000	.022000	.002250	....	....	
15,600	78,000	.024250	.002250	....	....	
16,000	80,000	.026800	.002550	....	....	
16,400	82,000	.029750	.002950	....	....	
16,800	84,000	.032750	.003000	....	....	
17,200	86,000	.036750	.004000	....	....	
17,600	88,000	.040600	.003850	....	....	
18,000	90,000	.045000	.004400	....	....	
18,400	92,000	.051000	.006000	....	....	
18,800	94,000	.0600	.0090	....	....	
19,200	96,000	.0650	.0050	....	....	
19,600	98,000	.0850	.0200	....	....	
19,920	99,600	.1300	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	99,600
Elastic limit per square inch of original section	do...	51,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do...	.002050
Reduction in diameter at point of rupture	do...	.075
Reduction in area after rupture, per centum of original section		27.4
Position of rupture		¾ inch from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.25*, ″.15

No. 2466.

Marks, $^{32}\mathrm{T}^{\mathrm{H}_1}_{\mathrm{T}_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100			
2,000	10,000	.000200	.000100			
3,000	15,000	.000350	.000150			
4,000	20,000	.000550	.000200			
5,000	25,000	.000750	.000200			
6,000	30,000	.000900	.000150			
7,000	35,000	.001100	.000200			
8,000	40,000	.001250	.000150			
9,000	45,000	.001450	.000200			
10,000	50,000	.001650	.000200			
10,200	51,000	.001700	.000050			
10,400	52,000	.001700	0.			
10,600	53,000	.001750	.000050			
10,800	54,000	.001800	.000050			
11,000	55,000	.001850	.000050			
11,200	56,000	.001900	.000050			Elastic limit.
11,400	57,000	.002300	.000400			
11,600	58,000	.003100	.000800			
11,800	59,000	.004900	.001800			
12,000	60,000	.006100	.001200			
12,400	62,000	.007750	.001650			
12,800	64,000	.009550	.001800			
13,200	66,000	.011050	.001500			
13,600	68,000	.012500	.001450			
14,000	70,000	.014300	.001800			
14,400	72,000	.016250	.001950			
14,800	74,000	.018500	.002250			
15,200	76,000	.020250	.001750			
15,600	78,000	.022500	.002250			
16,000	80,000	.025000	.002500			
16,400	82,000	.027550	.002550			
16,800	84,000	.030000	.002450			
17,200	86,000	.033550	.003550			
17,600	88,000	.037000	.003450			
18,000	90,000	.041000	.004000			
18,400	92,000	.046100	.005100			
18,800	94,000	.0550	.0089			
19,200	96,000	.0600	.0050			
19,600	98,000	.0700	.0100			
20,000	100,000	.1000	.0300			
20,180	100,900	.1350	.0350			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	100,900
Elastic limit per square inch of original section	do...	56,000
Elongation per inch after rupture	inch..	0.1900
Elongation per inch under strain at elastic limit	do ..	.001900
Reduction in diameter at point of rupture	do..	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		⅛ inch from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.25*, ″.13

No. 2467.

Marks, $^{32}\substack{\text{T H}_{1}\\ \text{T}_{2}}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001200	.000250	....	....	
8,000	40,000	.001350	.000150	....	....	
9,000	45,000	.001550	.000200	....	....	
10,000	50,000	.001700	.000150	....	....	
10,200	51,000	.001700	0.	....	....	
10,400	52,000	.001750	.000050	....	....	
10,600	53,000	.001800	.000050	....	....	
10,800	54,000	.001800	0.	....	....	
11,000	55,000	.001850	.000050	....	....	
11,200	56,000	.001900	.000050	....	....	Elastic limit.
11,400	57,000	.002500	.000600	....	....	
11,600	58,000	.004550	.002050	....	....	
11,800	59,000	.006000	.001450	....	....	
12,000	60,000	.006900	.000900	....	....	
12,400	62,000	.008250	.001350	....	....	
12,800	64,000	.009700	.001450	....	....	
13,200	66,000	.011400	.001700	....	....	
13,600	68,000	.012850	.001450	....	....	
14,000	70,000	.014900	.002050	....	....	
14,400	72,000	.016750	.001850	....	....	
14,800	74,000	.018750	.002000	....	....	
15,200	76,000	.020600	.001850	....	....	
15,600	78,000	.023150	.002550	....	....	
16,000	80,000	.025400	.002250	....	....	
16,400	82,000	.028100	.002700	....	....	
16,800	84,000	.030900	.002800	....	....	
17,200	86,000	.034250	.003350	....	....	
17,600	88,000	.038050	.003800	....	....	
18,000	90,000	.042250	.004200	....	....	
18,400	92,000	.047500	.005250	....	....	
18,800	94,000	.053250	.005750	....	....	
19,200	96,000	.0600	.006750	....	....	
19,600	98,000	.0750	.0150	....	....	
20,000	100,000	.1000	.0250	....	....	
20,100	100,500	.1350	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	100 500
Elastic limit per square inch of original section	do ..	56 000
Elongation per inch after rupture	inch..	0.1850
Elongation per inch under strain at elastic limit	do...	.001900
Reduction in diameter at point of rupture	do .	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		1".05 from neck
Character of broken surface		granular, 60 per centum; silky, 40 per centum
Elongation of inch sections		".22*, ".1

No. 2468.

Marks, $\overset{82\ \mathrm{T\ H_6}}{\mathrm{T_2}}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	.0	Initial load.
1, 000	5, 000	.000200	.000200	0.	....	
2, 000	10, 000	.000450	.000250	0.	....	
3, 000	15, 000	.000650	.000200	0.	....	
4, 000	20, 000	.000800	.000150	0.	....	
5, 000	25, 000	.001000	.000200	0.	....	
6, 000	30, 000	.001200	.000200	.000050	.000050	
7, 000	35, 000	.001300	.000100	....	....	
8, 000	40, 000	.001450	.000150	....	....	
9, 000	45, 000	.001700	.000250	....	....	
10, 000	50, 000	.001850	.000150	....	....	
10, 200	51, 000	.001900	.000050	....	....	
10, 400	52, 000	.002000	.000100	....	....	Elastic limit.
10, 600	53, 000	.002200	.000200	....	....	
10, 800	54, 000	.002400	.0002.0	....	....	
11, 000	55, 000	.003700	.001300	....	....	
11, 200	56, 000	.005250	.001550	....	....	
11, 400	57, 000	.006100	.000850	....	....	
11, 600	58, 000	.006750	.000650	....	....	
11, 800	59, 000	.007600	.000850	....	....	
12, 000	60, 000	.008600	.001000	....	....	
12, 400	62, 000	.010100	.001500	....	....	
12, 800	64, 000	.012000	.001900	....	....	
13, 200	66, 000	.013500	.001500	....	....	
13, 600	68, 000	.015500	.002000	....	....	
14, 000	70, 000	.017100	.001600	....	....	
14, 400	72, 000	.019250	.002150	....	....	
14, 800	74, 000	.021100	.001850	....	....	
15, 200	76, 000	.023500	.002400	....	....	
15, 600	78, 000	.026050	.002550	....	....	
16, 000	80, 000	.029000	.002950	....	....	
16, 400	82, 000	.032500	.003500	....	....	
16, 800	84, 000	.035150	.002650	....	....	
17, 200	86, 000	.039000	.003850	....	....	
17, 600	88, 000	.043500	.004500	....	....	
18, 000	90, 000	.048500	.005000	....	....	
18, 400	92, 000	.0550	.0065	....	....	
18, 800	94, 000	.0600	.0050	....	....	
19, 200	96, 000	.0800	.0200	....	....	
19, 560	97, 800	.1200	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	97, 800
Elastic limit per square inch of original section	do...	52, 000
Elongation per inch after rupture	inch..	0. 1750
Elongation per inch under strain at elastic limit	do...	.002000
Reduction in diameter at point of rupture	do...	.075
Reduction in area after rupture, per centum of original section		27. 4
Position of rupture		1 inch from neck

Character of broken surface, granular; dull spot at circumference; opened cracks in stem in vicinity of rupture.

Elongation of inch sections .... ".20*, ".15

No. 2285.

Marks, $^{32\,\mathrm{T\,H}}_{\mathrm{T}_1}$.
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001200	.000250	0.	....	
8,000	40,000	.001350	.000150	0.	....	
9,000	45,000	.001500	.000150	0.	....	
10,000	50,000	.001850	.000350	.000150	.000150	
10,200	51,000	.002100	.000250	....	....	
10,400	52,000	.002200	.000100	....	....	
10,600	53,000	.002250	.000050	....	....	Elastic limit.
10,800	54,000	.005000	.002750	....	....	
11,000	55,000	.007200	.002200	....	....	
11,200	56,000	.007900	.000700	....	....	
11,400	57,000	.008600	.000700	....	....	
11,600	58,000	.009300	.000700	....	....	
11,800	59,000	.010000	.000700	....	....	
12,000	60,000	.011150	.001150	....	....	
12,400	62,000	.012500	.001450	....	....	
12,800	64,000	.014250	.001750	....	....	
13,200	66,000	.016050	.001800	....	....	
13,600	68,000	.017900	.001850	....	....	
14,000	70,000	.019750	.001850	....	....	
14,400	72,000	.022000	.002250	....	....	
14,800	74,000	.024000	.002000	....	....	
15,200	76,000	.026550	.002550	....	....	
15,600	78,000	.029000	.002450	....	....	
16,000	80,000	.031750	.002750	....	....	
16,400	82,000	.035000	.003250	....	....	
16,800	84,000	.038300	.003300	....	....	
17,200	86,000	.042600	.004300	....	....	
17,600	88,000	.047850	.005250	....	....	
18,000	90,000	.053250	.005400	....	....	
18,400	92,000	.0600	.006750	....	....	
18,800	94,000	.0700	.0100	....	....	
19,200	96,000	.0950	.0250	....	....	
19,550	97,750	.1400	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	97,750
Elastic limit per square inch of original section	do...	53,000
Elongation per inch after rupture	inch..	0.2100
Elongation per inch under strain at elastic limit	do...	.002250
Reduction in diameter at point of rupture	do...	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		½ inch from neck
Character of broken surface		silky; fine granulation at circumference
Elongation of inch sections		″.31*, ″.11

No. 2286.

Marks, $^{32}\underset{T_2}{T}\,H_6$

Diameter, ″.505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000350	.000150	0.	....	
4, 000	20, 000	.000500	.000150	0.	....	
5, 000	25, 000	.000650	.000150	0.	....	
6, 000	30, 000	.000800	.000150	0.	....	
7, 000	35, 000	.001000	.000200	0.	....	
8, 000	40, 000	.001150	.000150	0.	....	
9, 000	45, 000	.001450	.000300	0.	....	
10, 000	50, 000	.001750	.000300	0.	....	
10, 200	51, 000	.001800	.000050	....	....	
10, 400	52, 000	.001850 .005250	.000050 .003400	....	....	Elastic limit.
10, 600	53, 000	.006600	.001350	....	....	
10, 800	54, 000	.007200	.000600	....	....	
11, 000	55, 000	.007950	.000750	....	....	
11, 200	56, 000	.008750	.000800	....	....	
11, 400	57, 000	.009600	.000850	....	....	
11, 600	58, 000	.010350	.000750	....	....	
11, 800	59, 000	.011250	.000900	....	....	
12, 000	60, 000	.012150	.000900	....	....	
12, 400	62, 000	.013650	.001500	....	....	
12, 800	64, 000	.015300	.001650	....	....	
13, 200	66, 000	.017400	.002100	....	....	
13, 600	68, 000	.020000	.002600	....	....	
14, 000	70, 000	.021700	.001700	....	....	
14, 400	72, 000	.023250	.001550	....	....	
14, 800	74, 000	.026400	.003150	....	....	
15, 200	76, 000	.029000	.002600	....	....	
15, 600	78, 000	.031200	.002200	....	....	
16, 000	80, 000	.035250	.004050	....	....	
16, 400	82, 000	.039250	.004000	....	....	
16, 800	84, 000	.044000	.004750	....	....	
17, 200	86, 000	.048500	.004500	....	....	
17, 600	88, 000	.055500	.007000	....	....	
18, 000	90, 000	.0650	.0095	....	....	
18, 400	92, 000	.0800	.0150	....	....	
18, 800	94, 000	.0950	.0150	....	....	
19, 120	95, 600	.1400	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 95, 600
Elastic limit per square inch of original section....................do .. 52, 000
Elongation per inch after rupture ....inch.. 0 2250
Elongation per inch under strain at elastic limit....................do... .001850
Reduction in diameter at point of rupture ....do... .105
Reduction in area after rupture, per centum of original section.................... 37. 1
Position of rupture....................″.55 from neck
Character of broken surface ....silky, with trace of granulation
Elongation of inch sections ....″.32*, ″.13

No. 2287.

Marks, $^{32}\frac{\text{T}}{\text{T}_2}\text{H}_6$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000300	.000200	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000950	.000200	0.	....	
7, 000	35, 000	.001100	.000150	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001450	.000200	0.	....	
10, 000	50, 000	.001600	.000150	0.	....	
10, 200	51, 000	.001700	.000100	....	....	
10, 400	52, 000	.001800	.000100	....	....	Elastic limit.
10, 600	53, 000	.004600	.002800	....	....	
10, 800	54, 000	.005500	.000900	....	....	
11, 000	55, 000	.006250	.000750	....	....	
11, 200	56, 000	.007000	.000750	....	....	
11, 400	57, 000	.007850	.000850	....	....	
11, 600	58, 000	.008650	.000800	....	....	
11, 800	59, 000	.009250	.000600	....	....	
12, 000	60, 000	.010000	.000750	....	....	
12 400	62, 000	.011750	.001750	....	....	
12, 800	64, 000	.013250	.001500	....	....	
13, 200	66, 000	.015200	.001950	....	....	
13, 600	68, 000	.017000	.001800	....	....	
14, 000	70, 000	.019250	.002250	....	....	
14, 400	72, 000	.020850	.001600	....	....	
14, 800	74, 000	.023000	.002150	....	....	
15, 200	76, 000	.025400	.002400	....	....	
15, 600	78, 000	.028000	.002600	....	....	
16, 000	80, 000	.030600	.002600	....	....	
16, 400	82, 000	.033550	.002950	....	....	
16, 800	84, 000	.037150	.003600	....	....	
17, 200	86, 000	.041050	.003900	....	....	
17, 600	88, 000	.045850	.004800	....	....	
18, 000	90, 000	.052000	.006150	....	....	
18, 400	92, 000	.0600	.0080	....	....	
18, 800	94, 000	.0700	.0100	....	....	
19, 200	96, 000	.0900	.0200	....	....	
19, 600	98, 000	.1200	.0300	....	....	
19, 620	98, 100	.1500	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98, 100
Elastic limit per square inch of original section	do...	52, 000
Elongation per inch after rupture	inch..	0. 2400
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do..	.115
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		1 inch from neck
Character of broken surface		granular, 50 per centum ; silky, 50 per centum
Elongation of inch sections		".30*, ".18

No. 2451.

Marks, $^{32}\frac{\mathrm{TH}_7}{\mathrm{T}_1}$
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000650	.000200	0.	....	
5, 000	25, 000	.000800	.000150	0.	....	
6, 000	30, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001150	.000200	....	....	
8, 000	40, 000	.001350	.000200	....	....	
9, 000	45, 000	.001550	.000200	....	....	
10, 000	50, 000	.001700	.000150	....	....	
10, 200	51, 000	.001750	.000050	....	....	
10, 400	52, 000	.001850	.000100	....	....	Elastic limit.
10, 600	53, 000	.006200	.004350	....	....	
10, 800	54, 000	.006750	.000550	....	....	
11, 000	55, 000	.007350	.000600	....	....	
11, 200	56, 000	.008100	.000750	....	....	
11, 400	57, 000	.008850	.000750	....	....	
11, 600	58, 000	.009650	.000800	....	....	
11, 800	59, 000	.010500	.000850	....	....	
12, 000	60, 000	.011300	.000800	....	....	
12, 400	62, 000	.013050	.001750	....	....	
12, 800	64, 000	.014650	.001600	....	....	
13, 200	66, 000	.016250	.001600	....	....	
13, 600	68, 000	.018200	.001950	....	....	
14, 000	70, 000	.020050	.001850	....	....	
14, 400	72, 000	.022250	.002200	....	....	
14, 800	74, 000	.024850	.002600	....	....	
15, 200	76, 000	.027350	.002500	....	....	
15, 600	78, 000	.029750	.002400	....	....	
16, 000	80, 000	.032550	.002800	....	....	
16, 400	82, 000	.036050	.003500	....	....	
16, 800	84, 000	.040000	.003950	....	....	
17, 200	86, 000	.043750	.003750	....	....	
17, 600	88, 000	.049000	.005250	....	....	
18, 000	90, 000	.055000	.006000	....	....	
18, 400	92, 000	.0600	.0050	....	....	
18, 800	94, 000	.0750	.0150	....	....	
19, 200	96, 000	.0900	.0150	....	....	
19, 520	97, 600	.1500	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	97, 600
Elastic limit per square inch of original section	do...	52, 000
Elongation per inch after rupture	inch..	0. 2250
Elongation per inch under strain at elastic limit	do...	.001850
Reduction in diameter at point of rupture	do...	.105
Reduction in area after rupture, per centum of original section		37. 1
Position of rupture		''.85 from neck
Character of broken surface		silky; traces of granulation
Elongation of inch sections		''.28*, ''.17

No. 2377.

Marks, $^{32}\frac{\mathrm{T\,H}_4}{\mathrm{T}_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000200	.000200	0.	....	
2, 000	10, 000	.000450	.000250	0.	....	
3, 000	15, 000	.000700	.000250	0.	....	
4, 000	20, 000	.000900	.000200	0.	....	
5, 000	25, 000	.001050	.000150	0.	....	
6, 000	30, 000	.001200	.000150	0.	....	
7, 000	35, 000	.001350	.000150	0.	....	
8, 000	40, 000	.001500	.000150	0.	....	
9, 000	45, 000	.001700	.000200	....	....	
10, 000	50, 000	.001950	.000250	....	....	
10, 200	51, 000	.002050	.000100	....	....	Elastic limit.
10, 400	52, 000	.002200	.000150	....	....	
10, 600	53, 000	.002450	.000250	....	....	
10, 800	54, 000	.002800	.000350	....	....	
11, 000	55, 000	.003300	.000500	....	....	
11, 200	56, 000	.003900	.000600	....	....	
11, 400	57, 000	.004750	.000850	....	....	
11, 600	58, 000	.005400	.000650	....	....	
11, 800	59, 000	.006450	.001050	....	....	
12, 000	60, 000	.007350	.000900	....	....	
12, 400	62, 000	.008900	.001550	....	....	
12, 800	64, 000	.010250	.001350	....	....	
13, 200	66, 000	.011600	.001350	....	....	
13, 600	68, 000	.013250	.001650	....	....	
14, 000	70, 000	.015250	.002000	....	....	
14, 400	72, 000	.017250	.002000	....	....	
14, 800	74, 000	.018750	.001500	....	....	
15, 200	76, 000	.021000	.002250	....	....	
15, 600	78, 000	.023100	.002100	....	....	
16, 000	80, 000	.026000	.002900	....	....	
16, 400	82, 000	.028750	.002750	....	....	
16, 800	84, 000	.032000	.003250	....	....	
17, 200	86, 000	.035250	.003250	....	....	
17, 600	88, 000	.039500	.004250	....	....	
18, 000	90, 000	.044000	.004500	....	....	
18, 400	92, 000	.049350	.005350	....	....	
18, 800	94, 000	.051250	.006900	....	....	
19, 200	96, 000	.0650	.008750	....	....	
19, 600	98, 000	.0900	.0250	....	....	
19, 920	99, 600	.1250	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 99, 600
Elastic limit per square inch of original section....................................do... 51, 000
Elongation per inch after rupture....................................inch.. 0. 1600
Elongation per inch under strain at elastic limit....................................do... .002050
Reduction in diameter at point of rupture....................................do... .075
Reduction in area after rupture, per centum of original section 27. 4
Position of rupture.................................... ¾ inch from neck
Character of broken surface, granular; dull spot at circumference; opened cracks in stem near point of rupture.
Elongation of inch sections....................................″.11, ″.21*

No. 2378.

Marks, $^{82}\frac{\text{T H}_4}{\text{T}_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000200	.000200	.000100	.000100	
2, 000	10, 000	.000450	.000250	.000100	0.	
3, 000	15, 000	.000650	.000200	.000100	0.	
4, 000	20, 000	.000850	.000200	.000100	0.	
5, 000	25, 000	.001050	.000200	.000150	.000050	
6, 000	30, 000	.001300	.000250	.000150	0.	
7, 000	35, 000	.001450	.000150	....	....	
8, 000	40, 000	.001600	.000150	....	....	
9, 000	45, 000	.001800	.000200	....	....	
10, 000	50, 000	.002000	.000200	....	....	
10, 200	51, 000	.002100	.000100	....	....	Elastic limit.
10, 400	52, 000	.002400	.000300	....	....	
10, 600	53, 000	.003300	.000900	....	....	
10, 800	54, 000	.004500	.001200	....	....	
11, 000	55, 000	.005550	.001050	....	....	
11, 200	56, 000	.006100	.000550	....	....	
11, 400	57, 000	.007050	.000950	....	....	
11, 600	58, 000	.007850	.000800	....	....	
11, 800	59, 000	.008550	.000700	....	....	
12, 000	60, 000	.009400	.000850	....	....	
12, 400	62, 000	.011000	.001600	....	....	
12, 800	64, 000	.012400	.001400	....	....	
13, 200	66, 000	.014000	.001600	....	....	
13, 600	68, 000	.015600	.001600	....	....	
14, 000	70, 000	.017500	.001900	....	....	
14, 400	72, 000	.019550	.002050	....	....	
14, 800	74, 000	.022000	.002450	....	....	
15, 200	76, 000	.024350	.002350	....	....	
15, 600	78, 000	.026550	.002200	....	....	
16, 000	80, 000	.028550	.002000	....	....	
16, 400	82, 000	.031500	.002950	....	....	
16, 800	84, 000	.035000	.003500	....	....	
17, 200	86, 000	.038250	.003250	....	....	
17, 600	88, 000	.042250	.004000	....	....	
18, 000	90, 000	.047500	.005250	....	....	
18, 400	92, 000	.053750	.006250	....	....	
18, 800	94, 000	.0600	.006250	....	....	
19, 200	96, 000	.0700	.0100	....	....	
19, 600	98, 000	.0900	.0200	....	....	
19, 860	99, 300	.1300	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..............................pounds.. 99, 300
Elastic limit per square inch of original section..............................do... 51, 000
Elongation per inch after rupture..............................inch.. 0. 1800
Elongation per inch under strain at elastic limit..............................do... .002100
Reduction in diameter at point of rupture..............................do... .085
Reduction in area after rupture, per centum of original section.............................. 30. 7
Position of rupture..............................″.80 from neck
Character of broken surface, granular; dull spot at circumference; opened cracks in surface of stem, near point of rupture.
Elongation of inch sections..............................″.12, ″.24*

No. 2379.

Marks, $^{32}\genfrac{}{}{0pt}{}{\mathrm{T\ H_4}}{\mathrm{T_8}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001200	.000200	....	....	
8,000	40,000	.001400	.000200	....	....	
9,000	45,000	.001550	.000150	....	....	
10,000	50,000	.001750	.000200	....	....	
10,200	51,000	.001800	.000050	....	....	
10,400	52,000	.001850	.000050	....	....	
10,600	53,000	.001950	.000100	....	....	
10,800	54,000	.002050	.000100	....	....	Elastic limit.
11,000	55,000	.002300	.000250	....	....	
11,200	56,000	.002900	.000600	....	....	
11,400	57,000	.004050	.001150	....	....	
11,600	58,000	.004750	.000700	....	....	
11,800	59,000	.005250	.000500	....	....	
12,000	60,000	.006550	.001300	....	....	
12,400	62,000	.008300	.001750	....	....	
12,800	64,000	.010350	.002050	....	....	
13,200	66,000	.011750	.001400	....	....	
13,600	68,000	.013750	.002000	....	....	
14,000	70,000	.015900	.002150	....	....	
14,400	72,000	.017750	.001850	....	....	
14,800	74,000	.019750	.002000	....	....	
15,200	76,000	.022000	.002250	....	....	
15,600	78,000	.024 50	.002250	....	....	
16,000	80,000	.026800	.002550	....	....	
16,400	82,000	.029750	.002950	....	....	
16,800	84,000	.032750	.003000	....	....	
17,200	86,000	.036750	.004000	....	....	
17,600	88,000	.040600	.003850	....	....	
18,000	90,000	.045000	.004400	....	....	
18,400	92,000	.051000	.006000	....	....	
18,800	94,000	.0600	.0090	....	....	
19,200	96,000	.0650	.0050	....	....	
19,600	98,000	.0850	.0200	....	....	
19,920	99,600	.1300	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section .... pounds.. 99,600
Elastic limit per square inch of original section ....do... 51,000
Elongation per inch after rupture ....inch.. 0.2000
Elongation per inch under strain at elastic limit ....do... .002050
Reduction in diameter at point of rupture ....do... .075
Reduction in area after rupture, per centum of original section 27.4
Position of rupture ....¾ inch from neck
Character of broken surface .... granular; dull spot at circumference
Elongation of inch sections ....″.25*, ″.15

No. 2466.

Marks, $^{32}\frac{\text{T H}_1}{\text{T}_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	[illegible]	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	...	...	
2,000	10,000	.000200	.000100	...	...	
3,000	15,000	.000350	.000150	...	...	
4,000	20,000	.000550	.000200	...	...	
5,000	25,000	.000750	.000200	...	...	
6,000	30,000	.000900	.000150	...	...	
7,000	35,000	.001100	.000200	...	...	
8,000	40,000	.001250	.000150	...	...	
9,000	45,000	.001450	.000200	...	...	
10,000	50,000	.001650	.000200	...	...	
10,200	51,000	.001700	.000050	...	...	
10,400	52,000	.001700	0.	...	...	
10,600	53,000	.001750	.000050	...	...	
10,800	54,000	.001800	.000050	...	...	
11,000	55,000	.001850	.000050	...	...	
11,200	56,000	.001900	.000050	...	...	Elastic limit.
11,400	57,000	.002300	.000400	...	...	
11,600	58,000	.003100	.000800	...	...	
11,800	59,000	.004900	.001800	...	...	
12,000	60,000	.006100	.001200	...	...	
12,400	62,000	.007750	.001650	...	...	
12,800	64,000	.009550	.001800	...	...	
13,200	66,000	.011050	.001500	...	...	
13,600	68,000	.012500	.001450	...	...	
14,000	70,000	.014300	.001800	...	...	
14,400	72,000	.016250	.001950	...	...	
14,800	74,000	.018500	.002250	...	...	
15,200	76,000	.020250	.001750	...	...	
15,600	78,000	.022500	.002250	...	...	
16,000	80,000	.025000	.002500	...	...	
16,400	82,000	.027550	.002550	...	...	
16,800	84,000	.030000	.002450	...	...	
17,200	86,000	.033550	.003550	...	...	
17,600	88,000	.037000	.003450	...	...	
18,000	90,000	.041000	.004000	...	...	
18,400	92,000	.046100	.005100	...	...	
18,800	94,000	.0550	.0089	...	...	
19,200	96,000	.0600	.0050	...	...	
19,600	98,000	.0700	.0100	...	...	
20,000	100,000	.1000	.0300	...	...	
20,180	100,900	.1350	.0350	...	...	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	100,900
Elastic limit per square inch of original section	do...	56,000
Elongation per inch after rupture	inch..	0.1900
Elongation per inch under strain at elastic limit	do ..	.001900
Reduction in diameter at point of rupture	do..	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		½ inch from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.25*, ″.13

No. 2467.

Marks, $^{32}\frac{\text{T H}_1}{\text{T}_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001200	.000250	....	....	
8,000	40,000	.001350	.000150	....	....	
9,000	45,000	.001550	.000200	....	....	
10,000	50,000	.001700	.000150	....	....	
10,200	51,000	.001700	0.	....	....	
10,400	52,000	.001750	.000050	....	....	
10,600	53,000	.001800	.000050	....	....	
10,800	54,000	.001800	0.	....	....	
11,000	55,000	.001850	.000050	....	....	
11,200	56,000	.001900	.000050	....	....	Elastic limit.
11,400	57,000	.002500	.000600	....	....	
11,600	58,000	.004550	.002050	....	....	
11,800	59,000	.006000	.001450	....	....	
12,000	60,000	.006900	.000900	....	....	
12,400	62,000	.008250	.001350	....	....	
12,800	64,000	.009700	.001450	....	....	
13,200	66,000	.011400	.001700	....	....	
13,600	68,000	.012850	.001450	....	....	
14,000	70,000	.014900	.002050	....	....	
14,400	72,000	.016750	.001850	....	....	
14,800	74,000	.018750	.002000	....	....	
15,200	76,000	.020600	.001850	....	....	
15,600	78,000	.023150	.002550	....	....	
16,000	80,000	.025400	.002250	....	....	
16,400	82,000	.028100	.002700	....	....	
16,800	84,000	.030900	.002800	....	....	
17,200	86,000	.034250	.003350	....	....	
17,600	88,000	.038050	.003800	....	....	
18,000	90,000	.042250	.004200	....	....	
18,400	92,000	.047500	.005250	....	....	
18,800	94,000	.053250	.005750	....	....	
19,200	96,000	.0600	.006750	....	....	
19,600	98,000	.0750	.0150	....	....	
20,000	100,000	.1000	.0250	....	....	
20,100	100,500	.1350	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	100 500
Elastic limit per square inch of original section	do ..	56 000
Elongation per inch after rupture	inch..	0.1850
Elongation per inch under strain at elastic limit	do...	.001900
Reduction in diameter at point of rupture	do .	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		1″.05 from neck
Character of broken surface		granular, 60 per centum; silky, 40 per centum
Elongation of inch sections		″.22*, ″.1

No. 2468.

Marks, $\overset{32\,\mathrm{T}\,\mathrm{H}_3}{\mathrm{T}_3}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	.0	Initial load.
1,000	5,000	.000200	.000200	0.	....	
2,000	10,000	.000450	.000250	0.	....	
3,000	15,000	.000650	.000200	0.	....	
4,000	20,000	.000800	.000150	0.	....	
5,000	25,000	.001000	.000200	0.	....	
6,000	30,000	.001200	.000200	.000050	.000050	
7,000	35,000	.001300	.000100	....	....	
8,000	40,000	.001450	.000150	....	....	
9,000	45,000	.001700	.000250	....	....	
10,000	50,000	.001850	.000150	....	....	
10,200	51,000	.001900	.000050	....	....	
10,400	52,000	.002000	.000100	....	....	Elastic limit.
10,600	53,000	.002200	.000200	....	....	
10,800	54,000	.002400	.000200	....	....	
11,000	55,000	.003700	.001300	....	....	
11,200	56,000	.005250	.001550	....	....	
11,400	57,000	.006100	.000850	....	....	
11,600	58,000	.006750	.000650	....	....	
11,800	59,000	.007600	.000850	....	....	
12,000	60,000	.008600	.001000	....	....	
12,400	62,000	.010100	.001500	....	....	
12,800	64,000	.012000	.001900	....	....	
13,200	66,000	.013500	.001500	....	....	
13,600	68,000	.015500	.002000	....	....	
14,000	70,000	.017100	.001600	....	....	
14,400	72,000	.019250	.002150	....	....	
14,800	74,000	.021100	.001850	....	....	
15,200	76,000	.023500	.002400	....	....	
15,600	78,000	.026050	.002550	....	....	
16,000	80,000	.029000	.002950	....	....	
16,400	82,000	.032500	.003500	....	....	
16,800	84,000	.035150	.002650	....	....	
17,200	86,000	.039000	.003850	....	....	
17,600	88,000	.043500	.004500	....	....	
18,000	90,000	.048500	.005000	....	....	
18,400	92,000	.0550	.0065	....	....	
18,800	94,000	.0600	.0050	....	....	
19,200	96,000	.0800	.0200	....	....	
19,560	97,800	.1200	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	97,800
Elastic limit per square inch of original section........do...	52,000
Elongation per inch after rupture ....inch..	0.1750
Elongation per inch under strain at elastic limit ....do...	.002000
Reduction in diameter at point of rupture........do...	.075
Reduction in area after rupture, per centum of original section........	27.4
Position of rupture........	1 inch from neck

Character of broken surface, granular; dull spot at circumference; opened cracks in stem in vicinity of rupture.

Elongation of inch sections ....″.20*, ″.15

No. 2285.

Marks, $^{32}\frac{\mathrm{T\ H.}}{\mathrm{T}_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000550	.000150	0.	....	
5, 000	25, 000	.000750	.000200	0.	....	
6, 000	30, 000	.000950	.000200	0.	....	
7, 000	35, 000	.001200	.000250	0.	....	
8, 000	40, 000	.001350	.000150	0.	....	
9, 000	45, 000	.001500	.000150	0.	....	
10, 000	50, 000	.001850	.000350	.000150	.000150	
10, 200	51, 000	.002100	.000250	....	....	
10, 400	52, 000	.002200	.000100	....	....	
10, 600	53, 000	.002250	.000050	....	....	Elastic limit.
10, 800	54, 000	.005000	.002750	....	....	
11, 000	55, 000	.007200	.002200	....	....	
11, 200	56, 000	.007900	.000700	....	....	
11, 400	57, 000	.008600	.000700	....	....	
11, 600	58, 000	.009300	.000700	....	....	
11, 800	59, 000	.010000	.000700	....	....	
12, 000	60, 000	.011150	.001150	....	....	
12, 400	62, 000	.012500	.001450	....	....	
12, 800	64, 000	.014250	.001750	....	....	
13, 200	66, 000	.016050	.001800	....	....	
13, 600	68, 000	.017900	.001850	....	....	
14, 000	70, 000	.019750	.001850	....	....	
14, 400	72, 000	.022000	.002250	....	....	
14, 800	74, 000	.024000	.002000	....	....	
15, 200	76, 000	.026550	.002550	....	....	
15, 600	78, 000	.029000	.002450	....	....	
16, 000	80, 000	.031750	.002750	....	....	
16, 400	82, 000	.035000	.003250	....	....	
16, 800	84, 000	.038300	.003300	....	....	
17, 200	86, 000	.042600	.004300	....	....	
17, 600	88, 000	.047850	.005250	....	....	
18, 000	90, 000	.053250	.005400	....	....	
18, 400	92, 000	.0600	.006750	....	....	
18, 800	94, 000	.0700	.0100	....	....	
19, 200	96, 000	.0950	.0250	....	....	
19, 550	97, 750	.1400	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	97, 750
Elastic limit per square inch of original section	do...	53, 000
Elongation per inch after rupture	inch..	0. 2100
Elongation per inch under strain at elastic limit	do...	.002250
Reduction in diameter at point of rupture	do...	.115
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		⅜ inch from neck
Character of broken surface		silky; fine granulation at circumference
Elongation of inch sections		″.31*, ″.11

No. 2286.

Marks, $^{32}\underset{T_7}{T}\,H_6$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000350	.000150	0.	....	
4, 000	20, 000	.000500	.000150	0.	....	
5, 000	25, 000	.000650	.000150	0.	....	
6, 000	30, 000	.000800	.000150	0.	....	
7, 000	35, 000	.001000	.000200	0.	....	
8, 000	40, 000	.001150	.000150	0.	....	
9, 000	45, 000	.001450	.000300	0.	....	
10, 000	50, 000	.001750	.000300	0.	....	
10, 200	51, 000	.001800	.000050	....	....	
10, 400	52, 000	.001850 .005250	.000050 .003400	....	....	Elastic limit.
10, 600	53, 000	.006600	.001350	....	....	
10, 800	54, 000	.007200	.000600	....	....	
11, 000	55, 000	.007950	.000750	....	....	
11, 200	56, 000	.008750	.000800	....	....	
11, 400	57, 000	.009600	.000850	....	....	
11, 600	58, 000	.010350	.000750	....	....	
11, 800	59, 000	.011250	.000900	....	....	
12, 000	60, 000	.012150	.000900	....	....	
12, 400	62, 000	.013650	.001500	....	....	
12, 800	64, 000	.015300	.001650	....	....	
13, 200	66, 000	.017400	.002100	....	....	
13, 600	68, 000	.020000	.002600	....	....	
14, 000	70, 000	.021700	.001700	....	....	
14, 400	72, 000	.023250	.001550	....	....	
14, 800	74, 000	.026400	.003150	....	....	
15, 200	76, 000	.029000	.002600	....	....	
15, 600	78, 000	.031200	.002200	....	....	
16, 000	80, 000	.035250	.004050	....	....	
16, 400	82, 000	.039250	.004000	....	....	
16, 800	84, 000	.044000	.004750	....	....	
17, 200	86, 000	.048500	.004500	....	....	
17, 600	88, 000	.055500	.007000	....	....	
18, 000	90, 000	.0650	.0095	....	....	
18, 400	92, 000	.0800	.0150	....	....	
18, 800	94, 000	.0950	.0150	....	....	
19, 120	95, 600	.1400	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	95, 600
Elastic limit per square inch of original section	do ..	52, 000
Elongation per inch after rupture	inch..	0 2250
Elongation per inch under strain at elastic limit	do...	.001850
Reduction in diameter at point of rupture	do...	.105
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		″.55 from neck
Character of broken surface		silky, with trace of granulation
Elongation of inch sections		″.32*, ″.13

No. 2287.

Marks, $^{32}\genfrac{}{}{0pt}{}{\mathrm{T\ H}_6}{\mathrm{T}_3}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000300	.000200	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000950	.000200	0.	....	
7, 000	35, 000	.001100	.000150	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001450	.000200	0.	....	
10, 000	50, 000	.001600	.000150	0.	....	
10, 200	51, 000	.001700	.000100	....	....	
10, 400	52, 000	.001800	.000100	....	....	Elastic limit.
10, 600	53, 000	.004600	.002800	....	....	
10, 800	54, 000	.005500	.000900	....	....	
11, 000	55, 000	.006250	.000750	....	....	
11, 200	56, 000	.007000	.000750	....	....	
11, 400	57, 000	.007850	.000850	....	....	
11, 600	58, 000	.008650	.000800	....	....	
11, 800	59, 000	.009250	.000600	....	....	
12, 000	60, 000	.010000	.000750	....	....	
12 400	62, 000	.011750	.001750	....	....	
12, 800	64, 000	.013250	.001500	....	....	
13, 200	66, 000	.015200	.001950	....	....	
13, 600	68, 000	.017000	.001800	....	....	
14, 000	70, 000	.019250	.002250	....	....	
14, 400	72, 000	.020850	.001600	....	....	
14, 800	74, 000	.023000	.002150	....	....	
15, 200	76, 000	.025400	.002400	....	....	
15, 600	78, 000	.028000	.002600	....	....	
16, 000	80, 000	.030600	.002600	....	....	
16, 400	82, 000	.033550	.002950	....	....	
16, 800	84, 000	.037150	.003600	....	....	
17, 200	86, 000	.041050	.003900	....	....	
17, 600	88, 000	.045850	.004800	....	....	
18, 000	90, 000	.052000	.006150	....	....	
18, 400	92, 000	.0600	.0080	....	....	
18, 800	94, 000	.0700	.0100	....	....	
19, 200	96, 000	.0900	.0200	....	....	
19, 600	98, 000	.1200	.0300	....	....	
19, 620	98, 100	.1500	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98, 100
Elastic limit per square inch of original section	do...	52, 000
Elongation per inch after rupture	inch..	0. 2400
Elongation per inch under strain at elastic limit	do ..	.001800
Reduction in diameter at point of rupture	do..	.115
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		1 inch from neck
Character of broken surface		granular, 50 per centum ; silky, 50 per centum
Elongation of inch sections		″.30*, ″.18

No. 2451.

Marks, $^{32}\frac{T\,H_7}{T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001150	.000200	....	....	
8,000	40,000	.001350	.000200	....	....	
9,000	45,000	.001550	.000200	....	....	
10,000	50,000	.001700	.000150	....	....	
10,200	51,000	.001750	.000050	....	....	
10,400	52,000	.001850	.000100	....	....	Elastic limit.
10,600	53,000	.006200	.004350	....	....	
10,800	54,000	.006750	.000550	....	....	
11,000	55,000	.007350	.000600	....	....	
11,200	56,000	.008100	.000750	....	....	
11,400	57,000	.008850	.000750	....	....	
11,600	58,000	.009650	.000800	....	....	
11,800	59,000	.010500	.000850	....	....	
12,000	60,000	.011300	.000800	....	....	
12,400	62,000	.013050	.001750	....	....	
12,800	64,000	.014650	.001600	....	....	
13,200	66,000	.016250	.001600	....	....	
13,600	68.000	.018200	.001950	....	....	
14,000	70,000	.020050	.001850	....	....	
14,400	72,000	.022250	.002200	....	....	
14,800	74.000	.024850	.002600	....	....	
15,200	76,000	.027350	.002500	....	....	
15,600	78,000	.029750	.002400	....	....	
16,000	80,000	.032550	.002800	....	....	
16,400	82,000	.036050	.003500	....	....	
16,800	84,000	.040000	.003950	....	....	
17,200	86,000	.043750	.003750	....	....	
17,600	88,000	.049000	.005250	....	....	
18,000	90,000	.055000	.006000	....	....	
18,400	92,000	.0600	.0050	....	....	
18,800	94,000	.0750	.0150	....	....	
19,200	96,000	.0900	.0150	....	....	
19,520	97,600	.1500	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	97,600
Elastic limit per square inch of original section	do...	52,000
Elongation per inch after rupture	inch..	0.2250
Elongation per inch under strain at elastic limit	do...	.001850
Reduction in diameter at point of rupture	do...	.105
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		″.85 from neck
Character of broken surface		silky; traces of granulation
Elongation of inch sections		″.28*, ″.17

No. 2452.

Marks, $^{32}\frac{\mathrm{T}}{\mathrm{T}_2}\mathrm{H}_7$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	000250	.000150	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000550	.000150	0.	....	
5, 000	25, 000	.000700	.000150	0.	....	
6, 000	30, 000	.000900	.000200	0.	....	
7, 000	35, 000	.001100	.000200	....	....	
8, 000	40, 000	.001250	.000150	....	....	
9, 000	45, 000	.001400	.000150	....	....	
10, 000	50, 000	.001550	.000150	....	....	
10, 200	51, 000	.001600	.000050	....	....	Elastic limit.
10, 400	52, 000	.002000	.000400	....	....	
10, 600	53, 000	.003750	.003750	....	....	
10, 800	54, 000	.006750	.001000	....	....	
11, 000	55, 000	.007500	.000750	....	....	
11, 200	56, 000	.008150	.000650	....	....	
11, 400	57, 000	.009000	.000850	....	....	
11, 600	58, 000	.009700	.000700	....	....	
11, 800	59, 000	.010600	.000900	....	....	
12, 000	60, 000	.011300	.000700	....	....	
12, 400	62, 000	.012600	.001300	....	....	
12, 800	64, 000	.014600	.002000	....	....	
13, 200	66, 000	.016250	.001650	....	....	
13, 600	68, 000	.018100	.001850	....	....	
14, 000	70, 000	.020100	.002000	....	....	
14, 400	72, 000	.022300	.002200	....	....	
14, 800	74, 000	.024700	.002400	....	....	
15, 200	76, 000	.027100	.002400	....	....	
15, 600	78, 000	.029750	.002650	....	....	
16, 000	80, 000	.032750	.003000	....	....	
16, 400	82, 000	.036050	.003300	....	....	
16, 800	84, 000	.039800	.003750	....	....	
17, 200	86, 000	.044000	.004200	....	....	
17, 600	88, 000	.049500	.005500	....	....	
18, 000	90, 000	.055500	.006000	....	....	
18, 400	92, 000	.0650	.0095	....	....	
18, 700	93, 500	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section.........................pounds..	93, 500
Elastic limit per square inch of original section ....do...	51, 000
Elongation per inch after rupture ....inch..	0. 0700
Elongation per inch under strain at elastic limit...............................do...	.001600
Reduction in diameter at point of rupture ....do...	.025
Reduction in area after rupture, per centum of original section	9. 5
Position of rupture	″.30 inch from neck
Character of broken surface	granular; dull spot at circumference
Elongation of inch sections	″.08* ″.06

No. 2453.

Marks, $^{32}\substack{\text{T H,}\\ \text{T,}}$

Diameter, ".505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000700	.000200	0.	....	
5,000	25,000	.000900	.000200	0.	....	
6,000	30,000	.001050	.000150	0.	....	
7,000	35,000	.001200	.000150	....	....	
8,000	40,000	.001400	.000200	....	....	
9,000	45,000	.001550	.000150	....	....	
10,000	50,000	.001750	.000200	....	....	
10,200	51,000	.001800	.000050	....	....	Elastic limit.
10,400	52,000	.001950	.000150	....	....	
10,600	53,000	.003100	.001150	....	....	
10,800	54,000	.006100	.003000	....	....	
11,000	55,000	.007000	.000900	....	....	
11,200	56,000	.007600	.000600	....	....	
11,400	57,000	.008100	.000500	....	....	
11,600	58,000	.008700	.000600	....	....	
11,800	59,000	.009550	.000850	....	....	
12,000	60,000	.010300	.000750	....	....	
12,400	62,000	.012000	.001700	....	....	
12,800	64,000	.013750	.001750	....	....	
13,200	66,000	.015500	.001750	....	....	
13,600	68,000	.017100	.001600	....	....	
14,000	70,000	.019000	.001900	....	....	
14,400	72,000	.021000	.002000	....	....	
14,800	74,000	.023000	.002000	....	....	
15,200	76,000	.025150	.002150	....	....	
15,600	78,000	.027750	.002600	....	....	
16,000	80,000	.030600	.002850	....	....	
16,400	82,000	.033500	.002900	....	....	
16,800	84,000	.037050	.003550	....	....	
17,200	86,000	.042000	.004950	....	....	
17,600	88,000	.046000	.004000	....	....	
18,000	90,000	.051300	.005300	....	....	
18,400	92,000	.0550	.0037	....	....	
18,800	94,000	.0600	.0050	....	....	
19,200	96,000	.0800	.0200	....	....	
19,600	98,000	.1000	.0200	....	....	
19,760	98,800	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98,800
Elastic limit per square inch of original section	do...	51,000
Elongation per inch after rupture	inch..	0.2350
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		".70 from neck
Character of broken surface		silky
Elongation of inch sections		".16, ".31*

[Additional specimens.]

No. 2441.

Marks, $^{32}\frac{\mathrm{T\,H_7}}{\mathrm{T_4}}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000350	.000250	0.	....	
3,000	15,000	.000550	.000200	0.	....	
4,000	20,000	.000700	.000150	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.001050	.000200	0.	....	
7,000	35,000	.001200	.000150	0.	....	
8,000	40,000	.001350	.000150	....	....	
9,000	45,000	.001550	.000200	....	....	
10,000	50,000	.001700	.000150	....	....	
11,000	55,000	.001900	.000200	....	....	
11,200	56,000	.001950	.000050	....	....	
11,400	57,000	.001950	0.	....	....	
11,600	58,000	.002000	.000050	....	....	
11,800	59,600	.002050	.000050	....	....	
12,000	60,000	.002100	.000050	....	....	Elastic limit.
12,200	61,000	.002500	.000400	....	....	
12,400	62,000	.003150	.000650	....	....	
12,600	63,000	.004150	.001000	....	....	
12,800	64,000	.006200	.002050	....	....	
13,200	66,000	.008250	.002050	....	....	
13,600	68,000	.010300	.002050	....	....	
14,000	70,000	.012500	.002200	....	....	
14,400	72,000	.014800	.002300	....	....	
14,800	74,000	.017000	.002200	....	....	
15,200	76,000	.019050	.002050	....	....	
15,600	78,000	.020950	.001900	....	....	
16,000	80,000	.023100	.002150	....	....	
16,400	82,000	.025750	.002650	....	....	
16,800	84,000	.029250	.003500	....	....	
17,200	86,000	.032000	.002750	....	....	
17,600	88,000	.036000	.004000	....	....	
18,000	90,000	.041100	.005100	....	....	
18,400	92,000	.0450	.0039	....	....	
18,800	94,000	.0500	.0050	....	....	
19,200	96,000	.0600	.0100	....	....	
19,600	98,000	.0750	.0150	....	....	
20,000	100,000	.1050	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	100,000
Elastic limit per square inch of original section	do. ..	60,000
Elongation per inch after rupture	inch..	0.2100
Elongation per inch under strain at elastic limit	do...	.002100
Reduction in diameter at point of rupture	do...	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		".65 from neck
Character of broken surface		silky
Elongation of inch sections		".30*, ".12

No. 2442.

Marks, $^{32}\underset{T_5}{\text{T}}\text{H}\cdot$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001050	.000150	0.	....	
8,000	40,000	.001300	.000250	0.	....	
9,000	45,000	.001500	.000200	0.	....	
10,000	50,000	.001600	.000100	....	....	
10,200	51,000	.001650	.000050	....	....	
10,400	52,000	.001700	.000050	....	....	Elastic limit.
10,600	53,000	.004650	.002950	....	....	
10,800	54,000	.006850	.002200	....	....	
11,000	55,000	.007900	.001050	....	....	
11,200	56,000	.008750	.000850	....	....	
11,400	57,000	.009750	.001000	....	....	
11,600	58,000	.010500	.000750	....	....	
11,800	59,000	.011250	.000750	....	....	
12,000	60,000	.011750	.000500	....	....	
12,400	62,000	.013500	.001750	....	....	
12,800	64,000	.015250	.001750	....	....	
13,200	66,000	.017050	.001800	....	....	
13,600	68,000	.020500	.003450	....	....	
14,000	70,000	.022500	.002000	....	....	
14,400	72,000	.024500	.002000	....	....	
14,800	74,000	.027000	.002500	....	....	
15,200	76,000	.030000	.003000	....	....	
15,600	78,000	.033000	.003000	....	....	
16,000	80,000	.037000	.004000	....	....	
16,400	82,000	.042000	.005000	....	....	
16,800	84,000	.046500	.004500	....	....	
17,200	86,000	.053500	.007000	....	....	
17,600	88,000	.0600	.0065	....	....	
18,000	90,000	.0750	.0150	....	....	
18,400	92,000	.0900	.0150	....	....	
18,780	93,900	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	93,900
Elastic limit per square inch of original section	do	52,000
Elongation per inch after rupture	inch	0.2600
Elongation per inch under strain at elastic limit	do	.001700
Reduction in diameter at point of rupture	do	.145
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		″.25*, ″.27*

No. 2443.

Marks, $^{32\,\text{T H}}_{\text{T}_4}$,
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	**Initial load.**
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000650	.000250	0.	....	
5,000	25,000	.000850	.000200	0.	....	
6,000	30,000	.000950	.000100	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001300	.000200	0.	....	
9,000	45,000	.001450	.000150	0.	....	
10,000	50,000	.001600	.000150	0.	....	
10,200	51,000	.001600	0.	....	....	
10,400	52,000	.001650	.000050	....	....	
10,600	53,000	.001700	.000050	....	....	
10,800	54,000	.001750	.000050	....	....	
11,000	55,000	.001750	0.	....	....	**Elastic limit.**
11,200	56,000	.005000	.003250	....	....	
11,400	57,000	.007100	.002100	....	....	
11,600	58,000	.008000	.000900	....	....	
11,800	59,000	.008750	.000750	....	....	
12,000	60,000	.009700	.000950	....	....	
12,400	62,000	.011350	.001650	....	....	
12,800	64,000	.013000	.001650	....	....	
13,200	66,000	.014650	.001650	....	....	
13,600	68,000	.016500	.001850	....	....	
14,000	70,000	.018750	.002250	....	....	
14,400	72,000	.021000	.002250	....	....	
14,800	74,000	.023500	.002500	....	....	
15,200	76,000	.025600	.002100	....	....	
15,600	78,000	.028500	.002900	....	....	
16,000	80,000	.032000	.003500	....	....	
16,400	82,000	.036500	.004500	....	....	
16,800	84,000	.040000	.003500	....	....	
17,200	86,000	.043750	.003750	....	....	
17,600	88,000	.050000	.006250	....	....	
18,000	90,000	.0650	.0050	....	....	
18,400	92,000	.0650	.0100	....	....	
18,800	94,000	.0850	.0200	....	....	
19,200	96,000	.1050	.0200	....	....	
19,280	96,400	.1550	.0500	....	....	**Tensile strength.**

General summary.

Tensile strength per square inch of original section	pounds..	96,400
Elastic limit per square inch of original section	do...	55,000
Elongation per inch after rupture	inch..	0.2450
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.145
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.34*, ″.15

No. 2454.

Marks, $32\,\frac{T}{T_1}\,H_3$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	. 000100	. 000100	0.	....	
2, 000	10, 000	. 000250	. 000150	0.	....	
3, 000	15, 000	. 000450	. 000200	0.	....	
4, 000	20, 000	. 000600	. 000150	0.	....	
5, 000	25, 000	. 000850	. 000250	0.	....	
6, 000	30, 000	. 001000	. 000150	0.	....	
7, 000	35, 000	. 001150	. 000150	....	....	
8, 000	40, 000	. 001350	. 000200	....	....	
9, 000	45, 000	. 001500	. 000150	....	....	
10, 000	50, 000	. 001650	. 000150	....	....	
10, 200	51, 000	. 001750	. 000100	....	....	
10, 400	52, 000	. 001850	. 000100	....	....	
10, 600	53, 000	. 001900	. 000050	....	....	Elastic limit.
10, 800	54, 000	. 006100	. 004200	....	....	
11, 000	55, 000	. 007450	. 001350	....	....	
11, 200	56, 000	. 008250	. 000800	....	....	
11, 400	57, 000	. 008700	. 000450	....	....	
11, 600	58, 000	. 009300	. 000600	....	....	
11, 800	59, 000	. 010150	. 000850	....	....	
12, 000	60, 000	. 010900	. 000750	....	....	
12, 400	62, 000	. 012400	. 001500	....	....	
12, 800	64, 000	. 014050	. 001650	....	....	
13, 200	66, 000	. 015750	. 001700	....	....	
13, 600	68, 000	. 017500	. 001750	....	....	
14, 000	70, 000	. 019550	. 002050	....	....	
14, 400	72, 000	. 022000	. 002450	....	....	
14, 800	74, 000	. 024000	. 002000	....	....	
15, 200	76, 000	. 026700	. 002700	....	....	
15, 600	78, 000	. 029750	. 003050	....	....	
16, 000	80, 000	. 032250	. 002500	....	....	
16, 400	82, 000	. 035600	. 003350	....	....	
16, 800	84, 000	. 039500	. 003900	....	....	
17, 200	86, 000	. 044000	. 004500	....	....	
17, 600	88, 000	. 049000	. 005000	....	....	
18, 000	90, 000	. 054500	. 005500	....	....	
18, 400	92, 000	. 0600	. 0055	....	....	
18, 800	94, 000	. 0700	. 0100	....	....	
19, 200	96, 000	. 0900	. 0200	....	....	
19, 500	97, 500	. 1300	. 0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	97, 500
Elastic limit per square inch of original section	do	53, 000
Elongation per inch after rupture	inch	0. 2300
Elongation per inch under strain at elastic limit	do	. 001900
Reduction in diameter at point of rupture	do	. 124
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.31*, ″.15

No. 2455.

Marks, $^{32\,T\,H_8}_{T_8}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001100	.000200	....	....	
8,000	40,000	.001250	.000150	....	....	
9,000	45,000	.001400	.000150	....	....	
10,000	50,000	.001550	.000150	....	....	
10,200	51,000	.001550	0.	....	....	
10,400	52,000	.001600	.000050	....	....	Elastic limit.
10,600	53,000	.004100	.002500	....	....	
10,800	54,000	.005500	.001400	....	....	
11,000	55,000	.007000	.001500	....	....	
11,200	56,000	.007750	.000750	....	....	
11,400	57,000	.008250	.000500	....	....	
11,600	58,000	.009250	.001000	....	....	
11,800	59,000	.010250	.001000	....	....	
12,000	60,000	.011000	.000750	....	....	
12,400	62,000	.012400	.001400	....	....	
12,800	64,000	.014050	.001650	....	....	
13,200	66,000	.015800	.001750	....	....	
13,600	68 000	.017500	.001750	....	....	
14,000	70,000	.020000	.002500	....	....	
14,400	72,000	.022250	.002250	....	....	
14,800	74,000	.024500	.002250	....	....	
15,200	76,000	.026750	.002250	....	....	
15,600	78,000	.029250	.002500	....	....	
16,000	80,000	.032000	.002750	....	....	
16,400	82,000	.035650	.003650	....	....	
16,800	84,000	.039500	.003850	....	....	
17,200	86,000	.044750	.005250	....	....	
17,600	88,000	.050000	.005250	....	....	
18,000	90,000	.0550	.0050	....	....	
18,400	92,000	.0600	.0050	....	....	
18,800	94.000	.0700	.0100	....	....	
19,200	96,000	.0950	.0250	....	....	
19,390	96,950	.1250	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96,950
Elastic limit per square inch of original section	do...	52,000
Elongation per inch after rupture	inch..	0.1900
Elongation per inch under strain at elastic limit	do...	.001600
Reduction in diameter at point of rupture	do ..	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		¾ inch from neck
Character of broken surface		silky; traces of granulation
Elongation of inch sections		″.27*, ″.11

No. 2456.

Marks, $^{32}\frac{T\ H_6}{T_3}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000450	.000250	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001150	.000200	....	....	
8,000	40,000	.001300	.000150	....	....	
9,000	45,000	.001450	.000150	....	....	
10,000	50,000	.001650	.000200	....	....	
10,200	51,000	.001650	0.	....	....	
10,400	52,000	.001700	.000050	....	....	Elastic limit.
10,600	53,000	.003750	.002050	....	....	
10,800	54,000	.006000	.002250	....	....	
11,000	55,000	.007000	.001000	....	....	
11,200	56,000	.007650	.000650	....	....	
11,400	57,000	.008500	.000950	....	....	
11,600	58,000	.009250	.000750	....	....	
11,800	59,000	.010000	.000750	....	....	
12,000	60,000	.010750	.000750	....	....	
12,400	62,000	.012500	.001750	....	....	
12,800	64,000	.014150	.001650	....	....	
13,200	66,000	.015600	.001450	....	....	
13,600	68,000	.017550	.001950	....	....	
14,000	70,000	.019750	.002200	....	....	
14,400	72,000	.022100	.002350	....	....	
14,800	74,000	.024500	.002400	....	....	
15,200	76,000	.026550	.002050	....	....	
15,600	78,000	.029250	.002700	....	....	
16,000	80,000	.032000	.002750	....	....	
16,400	82,000	.035500	.003500	....	....	
16,800	84,000	.039550	.004050	....	....	
17,200	86,000	.043500	.003950	....	....	
17,600	88,000	.048250	.004750	....	....	
18,000	90,000	.054500	.006250	....	....	
18,400	92,000	.0650	.0105	....	....	
18,800	94,000	.0750	.0100	....	....	
19,200	96,000	.0900	.0150	....	....	
19,520	97,600	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	97,600
Elastic limit per square inch of original section..........do...	52,000
Elongation per inch after rupture..........inch..	0.2250
Elongation per inch under strain at elastic limit..........do...	.001700
Reduction in diameter at point of rupture..........do...	.125
Reduction in area after rupture, per centum of original section..........	43.3
Position of rupture..........	1″.15 from neck
Character of broken surface..........	silky; trace of granulation
Elongation of inch sections..........	″.25*, ″.20

No. 2969.

Marks, $^{32}\frac{T\,H_9}{T_1}$

Diameter, ".505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001100	.000150	....	....	
8,000	40,000	.001300	.000200	....	....	
9,000	45,000	.001500	.000200	....	....	
10,000	50,000	.001650	.000150	....	....	
10,200	51,000	.001700	.000050	....	....	
10,400	52,000	.001750	.000050	....	....	
10,600	53,000	.001800	.000050	....	....	
10,800	54,000	.001800	0.	....	....	Elastic limit.
11,000	55,000	.003000	.001200	....	....	
11,200	56,000	.003750	.000750	....	....	
11,400	57,000	.004450	.000700	....	....	
11,600	58,000	.005150	.000700	....	....	
11,800	59,000	.006550	.001400	....	....	
12,000	60,000	.007500	.000950	....	....	
12,400	62,000	.009150	.001650	....	....	
12,800	64,000	.010650	.001500	....	....	
13,200	66,000	.012150	.001500	....	....	
13,600	68,000	.014050	.001900	....	....	
14,000	70,000	.016250	.002200	....	....	
14,400	72,000	.018500	.002250	....	....	
14,800	74,000	.020000	.001500	....	....	
15,200	76,000	.022100	.002100	....	....	
15,600	78,000	.024600	.002500	....	....	
16,000	80,000	.027000	.002400	....	....	
16,400	82,000	.029750	.002750	....	....	
16,800	84,000	.032500	.002750	....	....	
17,200	86,000	.036000	.003500	....	....	
17,600	88,000	.039900	.003900	....	....	
18,000	90,000	.044500	.004600	....	....	
18,400	92,000	.050000	.0055	....	....	
18,800	94,000	.0550	.0050	....	....	
19,200	96,000	.0600	.0050	....	....	
19,600	98,000	.0850	.0250	....	....	
19,920	99,600	.1150	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	99,600
Elastic limit per square inch of original section	do...	54,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		".55 from neck
Character of broken surface		silky
Elongation of inch sections		".31*, ".09

No. 2470

Marks, $^{32}\frac{T\ H}{T_2}$,
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000550	.000250	0.	....	
4, 000	20, 000	.000750	.000200	0.	....	
5, 000	25, 000	.000850	.000100	0.	....	
6, 000	30, 000	.001150	.000300	0.	....	
7, 000	35, 000	.001200	.000050	....	....	
8, 000	40, 000	.001400	.000200	....	....	
9, 000	45, 000	.001550	.000150	....	....	
10, 000	50, 000	.001700	.000150	....	....	
10, 200	51, 000	.001750	.000050	....	....	
10, 400	52, 000	.001800	.000050	....	....	Elastic limit.
10, 600	53, 000	.006550	.004750	....	....	
10, 800	54, 000	.007100	.000550	....	....	
11, 000	55, 000	.007750	.000650	....	....	
11, 200	56, 000	.008400	.000650	....	....	
11, 400	57, 000	.009150	.000750	....	....	
11, 600	58, 000	.010000	.000850	....	....	
11, 800	59, 000	.010750	.000750	....	....	
12, 000	60, 000	.011750	.001000	....	....	
12, 400	62, 000	.013000	.001250	....	....	
12, 800	64, 000	.015000	.002000	....	....	
13, 200	66, 000	.016800	.001800	....	....	
13, 600	68, 000	.018750	.001950	....	....	
14, 000	70, 000	.020650	.001900	....	....	
14, 400	72, 000	.023050	.002400	....	....	
14, 800	74, 000	.025300	.002250	....	....	
15, 200	76, 000	.028000	.002700	....	....	
15, 600	78, 000	.030600	.002600	....	....	
16, 000	80, 000	.033600	.003000	....	....	
16, 400	82, 000	.037050	.003450	....	....	
16, 800	84, 000	.040650	.003600	....	....	
17, 200	86, 000	.045600	.004950	....	....	
17, 600	88, 000	.051500	.005900	....	....	
18, 000	90, 000	.0550	.0035	....	....	
18, 400	92, 000	.0600	.0050	....	....	
18, 800	94, 000	.0800	.0200	....	....	
19, 200	96, 000	.1100	.0300	....	....	
19, 260	96, 300	.1400	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96, 300
Elastic limit per square inch of original section	do...	52, 000
Elongation per inch after rupture	inch..	0. 2600
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.125
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		″.90 from neck
Character of broken surface		silky
Elongation of inch sections		″.35*, ″.17

No. 2471.

Marks, $^{32}\frac{\text{T}}{\text{T}_3}\text{H}$,
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000250	.000100	0.	....	
3, 000	15, 000	.000450	.000200	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000950	.000200	0.	....	
7, 000	35, 000	.001150	.000200	....	....	
8, 000	40, 000	.001300	.000150	....	....	
9, 000	45, 000	.001450	.000150	....	....	
10, 000	50, 000	.001600	.000150	....	....	
10, 200	51, 000	.001650	.000050	....	....	
10, 400	52, 000	.001700	.000050	....	....	
10, 600	53, 000	.001750	.000050	....	....	
10, 800	54, 000	.001800	.000050	....	....	Elastic limit.
11, 000	55, 000	.006300	.004500	....	....	
11, 200	56, 000	.007300	.001000	....	....	
11, 400	57, 000	.008000	.000700	....	....	
11, 600	58, 000	.008700	.000700	....	....	
11, 800	59, 000	.009500	.000800	....	....	
12, 000	60, 000	.010150	.000650	....	....	
12, 400	62, 000	.011800	.001650	....	....	
12, 800	64, 000	.013800	.002000	....	....	
13, 200	66, 000	.015400	.001600	....	....	
13, 600	68, 000	.017250	.001850	....	....	
14, 000	70, 000	.019100	.001850	....	....	
14, 400	72, 000	.021100	.002000	....	....	
14, 800	74, 000	.024000	.002900	....	....	
15, 200	76, 000	.025650	.001650	....	....	
15, 600	78, 000	.028250	.002600	....	....	
16, 000	80, 000	.031500	.003250	....	....	
16, 400	82, 000	.034500	.003000	....	....	
16, 800	84, 000	.038000	.003500	....	....	
17, 200	86, 000	.043500	.005500	....	....	
17, 600	88, 000	.049000	.005500	....	....	
18, 000	90, 000	.0550	.0060	....	....	
18, 400	92, 000	.0600	.0050	....	....	
18, 800	94, 000	.0700	.0100	....	....	
19, 200	96, 000	.0900	.0200	....	....	
19, 450	97, 250	.1350	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	97, 250
Elastic limit per square inch of original section	do...	54, 000
Elongation per inch after rupture	inch..	0. 2300
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.136
Reduction in area after rupture, per centum of original section		46. 2
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.33*, ″.13

No. 2472.

Marks, $^{32}\mathrm{T}\underset{\mathrm{T}_1}{\;}\mathrm{H}_{10}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000600	.000200	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001150	.000150	....	....	
8,000	40,000	.001300	.000150	....	....	
9,000	45,000	.001450	.000150	....	....	
10,000	50,000	.001650	.000200	....	....	
10,200	51,000	.001700	.000050	....	....	Elastic limit.
10,400	52,000	.002150	.000450	....	....	
10,600	53,000	.004000	.001850	....	....	
10,800	54,000	.005600	.001600	....	....	
11,000	55,000	.006250	.000650	....	....	
11,200	56,000	.007000	.000750	....	....	
11,400	57,000	.007600	.000600	....	....	
11,600	58,000	.008350	.000750	....	....	
11,800	59,000	.009350	.001000	....	....	
12,000	60,000	.010150	.000800	....	....	
12,400	62,000	.012000	.001850	....	....	
12,800	64,000	.013600	.001600	....	....	
13,200	66,000	.015500	.001900	....	....	
13,600	68,000	.017000	.001500	....	....	
14,000	70,000	.019250	.002250	....	....	
14,400	72,000	.021300	.002050	....	....	
14,800	74,000	.023500	.002200	....	....	
15,200	76,000	.026100	.002600	....	....	
15,600	78,000	.029000	.002900	....	....	
16,000	80,000	.032050	.003050	....	....	
16,400	82,000	.035750	.003700	....	....	
16,800	84,000	.039250	.003500	....	....	
17,200	86,000	.044800	.005550	....	....	
17,600	88,000	.0500	.0052	....	....	
18,000	90,000	.0550	.0050	....	....	
18,400	92,000	.0650	.0100	....	....	
18,800	94,000	.0800	.0150	....	....	
19,200	96,000	.1050	.0250	....	....	
19,300	96,500	.1300	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96,500
Elastic limit per square inch of original section	do...	51,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		″.60 from neck
Character of broken surface		silky
Elongation of inch sections		″.30*, ″.10

No. 2473.

Marks, $^{32}\frac{\mathrm{T\,H_{16}}}{\mathrm{T_2}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000400	.000250	0.	....	
3, 000	15, 000	.000550	.000150	0.	....	
4, 000	20, 000	.000700	.000150	0.	....	
5, 000	25, 000	.000850	.000150	0.	....	
6, 000	30, 000	.001000	.000150	0.	....	
7, 000	35, 000	.001200	.000200	....	....	
8, 000	40, 000	.001350	.000150	....	....	
9, 000	45, 000	.001450	.000100	....	....	
9, 600	48, 000	.001560	.000100	....	....	
9, 800	49, 000	.001600	.000050	....	....	Elastic limit.
10, 000	50, 000	.002650	.000150	....	....	
10, 200	51, 000	.003500	.000950	....	....	
10, 400	52, 000	.004550	.001050	....	....	
10, 600	53, 000	.006100	.001550	....	....	
10, 800	54, 000	.006750	.000650	....	....	
11, 000	55, 000	.007750	.001000	....	....	
11, 200	56, 000	.008500	.000750	....	....	
11, 400	57, 000	.009250	.000750	....	....	
11, 600	58, 000	.010000	.000750	....	....	
11, 800	59, 000	.010600	.000600	....	....	
12, 000	60, 000	.011500	.000900	....	....	
12, 400	62, 000	.013050	.001550	....	....	
12, 800	64, 000	.015000	.001950	....	....	
13, 200	66, 000	.017000	.002000	....	....	
13, 600	68, 000	.018600	.001600	....	....	
14, 000	70, 000	.021000	.002400	....	....	
14, 400	72, 000	.023500	.002500	....	....	
14, 800	74, 000	.025750	.002250	....	....	
15, 200	76, 000	.028500	.002750	....	....	
15, 600	78, 000	.031600	.003100	....	....	
16, 000	80, 000	.035000	.003400	....	....	
16, 400	82, 000	.038500	.003500	....	....	
16, 800	84, 000	.043050	.004550	....	....	
17, 200	86, 000	.050000	.006950	....	....	
17, 600	88, 000	.0550	.0050	....	....	
18, 000	90, 000	.0600	.0050	....	....	
18, 400	92, 000	.0700	.0100	....	....	
18, 800	94, 000	.0950	.0250	....	....	
19, 040	95, 200	.1450	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	95, 200
Elastic limit per square inch of original section	do ..	49, 000
Elongation per inch after rupture	inch..	0. 2200
Elongation per inch under strain at elastic limit	do...	.001600
Reduction in diameter at point of rupture	do...	.105
Reduction in area after rupture, per centum of original section		37. 1
Position of rupture		″.60 from neck
Character of broken surface		silky; part of surface interspersed with fine granulation
Elongation of inch sections		″.29*, ″.15

No. 2474.

Marks, $^{32}\frac{T}{T_5}H_{10}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000600	.000200	0.	....	
5,000	25,000	.000650	.000250	0.	....	
6,000	30,000	.001000	.000150	0.	....	
7,000	35,000	.001150	.000150	....	....	
8,000	40,000	.001350	.000200	....	....	
9,000	45,000	.001500	.000200	....	....	
10,000	50,000	.001700	.000150	....	....	
10,200	51,000	.001700	0.	....	....	
10,400	52,000	.001750	.000050	....	....	
10,600	53,000	.001850	.000100	....	....	Elastic limit.
10,800	54,000	.003750	.001900	....	....	
11,000	55,000	.005350	.001600	....	....	
11,200	56,000	.006150	.000800	....	....	
11,400	57,000	.007050	.000900	....	....	
11,600	58,000	.007800	.000750	....	....	
11,800	59,000	.008600	.000800	....	....	
12,000	60,000	.009600	.001000	....	....	
12,400	62,000	.011300	.001700	....	....	
12,800	64,000	.013050	.001750	....	....	
13,200	66,000	.014750	.001700	....	....	
13,600	68,000	.016750	.002000	....	....	
14,000	70,000	.018500	.001750	....	....	
14,400	72,000	.020600	.002100	....	....	
14,800	74,000	.022750	.002150	....	....	
15,200	76,000	.025500	.002750	....	....	
15,600	78,000	.028100	.002600	....	....	
16,000	80,000	.031550	.003450	....	....	
16,400	82,000	.035600	.004050	....	....	
16,800	84,000	.038500	.002900	....	....	
17,200	86,000	.043100	.004600	....	....	
17,600	88,000	.048750	.005650	....	....	
18,000	90,000	.0550	.006250	....	....	
18,400	92,000	.0650	.0100	....	....	
18,800	94,000	.0800	.0150	....	....	
19,200	96,000	.1050	.0250	....	....	
19,300	96,500	.1400	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96,500
Elastic limit per square inch of original section	do...	53,000
Elongation per inch after rupture	inch..	0.2500
Elongation per inch under strain at elastic limit	do...	.001850
Reduction in diameter at point of rupture	do...	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		″.95 from neck
Character of broken surface		silky
Elongation of inch sections		″.33*, ″.17

No. 2380.

Marks, $^{32}\frac{T}{T,}H_{11}$
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000650	.000100	0.	....	
6,000	30,000	.000850	.000200	0.	....	
7,000	35,000	.001050	.000200	....	....	
8,000	40,000	.001200	.000150	....	....	
9,000	45,000	.001350	.000150	....	....	
10,000	50,000	.001550	.000200	....	....	
10,200	51,000	.001600	.000050	....	....	Elastic limit.
10,400	52,000	.001800	.000200	....	....	
10,600	53,000	.003750	.001950	....	....	
10,800	54,000	.005250	.001500	....	....	
11,000	55,000	.005750	.000500	....	....	
11,200	56,000	.006500	.000750	....	....	
11,400	57,000	.007350	.000850	....	....	
11,600	58,000	.008150	.000800	....	....	
11,800	59,000	.009000	.000850	....	....	
12,000	60,000	.009900	.000900	....	....	
12,400	62,000	.011550	.001650	....	....	
12,800	64,000	.013500	.001950	....	....	
13,200	66,000	.015600	.002100	....	....	
13,600	68,000	.017000	.001400	....	....	
14,000	70,000	.018500	.001500	....	....	
14,400	72,000	.021500	.003000	....	....	
14,800	74,000	.024000	.002500	....	....	
15,200	76,000	.027000	.003000	....	....	
15,600	78,000	.029250	.002250	....	....	
16,000	80,000	.032100	.002850	....	....	
16,400	82,000	.036250	.004150	....	....	
16,800	84,000	.040150	.003900	....	....	
17,200	86,000	.045000	.004850	....	....	
17,600	88,000	.050000	.005000	....	....	
18,000	90,000	.0600	.0100	....	....	
18,400	92,000	.0650	.0050	....	....	
18,800	94,000	.0900	.0250	....	....	
19,100	95,500	.1200	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section........pounds..	95,500
Elastic limit per square inch of original section........do...	51,000
Elongation per inch after rupture........inch..	0.1900
Elongation per inch under strain at elastic limit........do ..	.001600
Reduction in diameter at point of rupture........do...	.115
Reduction in area after rupture, per centum of original section........	40.3
Position of rupture........	''.95 from neck
Character of broken surface........	granular, 50 per centum; silky, 50 per centum
Elongation of inch sections........	''.13, ''.25*

No. 2381.

Marks, $^{82}\underset{T_2}{T}H_{11}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001200	.000200	....	....	
8,000	40,000	.001350	.000150	....	....	
9,000	45,000	.001550	.000200	....	....	
10,000	50,000	.001750	.000200	....	....	
10,200	51,000	.001800	.000050	....	....	
10,400	52,000	.001800	0.	....	....	Elastic limit.
10,600	53,000	.002550	.000750	....	....	
10,800	54,000	.003500	.000950	....	....	
11,000	55,000	.004650	.001150	....	....	
11,200	56,000	.005550	.000900	....	....	
11,400	57,000	.006300	.000750	....	....	
11,600	58,000	.006800	.000500	....	....	
11,800	59,000	.008050	.001250	....	....	
12,000	60,000	.009050	.001000	....	....	
12,400	62,000	.010800	.001750	....	....	
12,800	64,000	.012050	.001250	....	....	
13,200	66,000	.014550	.002500	....	....	
13,600	68,000	.016500	.001950	....	....	
14,000	70,000	.018200	.001700	....	....	
14,400	72,000	.020600	.002400	....	....	
14,800	74,000	.023000	.002400	....	....	
15,200	76,000	.025750	.002750	....	....	
15,600	78,000	.028400	.002650	....	....	
16,000	80,000	.031400	.003000	....	....	
16,400	82,000	.035000	.003600	....	....	
16,800	84,000	.038750	.003750	....	....	
17,200	86,000	.043500	.004750	....	....	
17,600	88,000	.048500	.005000	....	....	
18,000	90,000	.054750	.006250	....	....	
18,400	92,000	.0650	.010250	....	....	
18,800	94,000	.0800	.0150	....	....	
19,200	96,000	.1050	.0250	....	....	
19,300	96,500	.1400	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96,500
Elastic limit per square inch of original section	do...	52,000
Elongation per inch after rupture	inch..	0.2150
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		″.80 from neck
Character of broken surface		silky, 60 per centum; granular, 40 per centum
Elongation of inch sections		″.13, ″.30

No. 2382.

Marks, $^{32}\frac{T\ H_{11}}{T_3}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001100	.000150	....	....	
8,000	40,000	.001300	.000200	....	....	
9,000	45,000	.001500	.000200	....	....	
9,600	48,000	.001650	.000150	....	....	
9,800	49,000	.001700	.000050	....	....	
10,000	50,000	.001800	.000100	....	....	Elastic limit.
10,200	51,000	.002750	.000950	....	....	
10,400	52,000	.004600	.001850	....	....	
10,600	53,000	.005600	.001000	....	....	
10,800	54,000	.006100	.000500	....	....	
11,000	55,000	.007100	.001000	....	....	
11,200	56,000	.008050	.000950	....	....	
11,400	57,000	.008900	.000850	....	....	
11,600	58,000	.009650	.000750	....	....	
11,800	59,000	.010350	.000700	....	....	
12,000	60,000	.011250	.000900	....	....	
12,400	62,000	.013050	.001800	....	....	
12,800	64,000	.015250	.002200	....	....	
13,200	66,000	.017000	.001750	....	....	
13,600	68,000	.019350	.002350	....	....	
14,000	70,000	.022000	.002750	....	....	
14,400	72,000	.024250	.002250	....	....	
14,800	74,000	.026100	.001850	....	....	
15,200	76,000	.028750	.002650	....	....	
15,600	78,000	.032050	.003300	....	....	
16,000	80,000	.035500	.003450	....	....	
16,400	82,000	.040000	.004500	....	....	
16,800	84,000	.045000	.005000	....	....	
17,200	86,000	.051700	.006700	....	....	
17,600	88,000	.0600	.0083	....	....	
18,000	90,000	.0700	.0100	....	....	
18,400	92,000	.0900	.0200	....	....	
18,800	94,000	.1150	.0250	....	....	
18,920	94,600	.1550	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	94,600
Elastic limit per square inch of original section	do...	50,000
Elongation per inch after rupture	inch..	0.2300
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		§ inch from neck; oblique
Character of broken surface		silky
Elongation of inch sections		″.30*, ″.16

No. 2386.

Marks, $^{32}\frac{\text{T}}{\text{T}_1}\text{H}_{13}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001050	.000150	....	....	
8,000	40,000	.001200	.000150	....	....	
9,000	45,000	.001400	.000200	....	....	
10,000	50,000	.001650	.000250	....	....	
10,200	51,000	.001700	.000050	....	....	Elastic limit.
10,400	52,000	.003250	.001550	....	....	
10,600	53,000	.005600	.002350	....	....	
10,800	54,000	.006000	.000400	....	....	
11,000	55,000	.006600	.000600	....	....	
11,200	56,000	.007350	.000750	....	....	
11,400	57,000	.008250	.000900	....	....	
11,600	58,000	.008900	.000650	....	....	
11,800	59,000	.009700	.000800	....	....	
12,000	60,000	.010600	.000900	....	....	
12,400	62,000	.012100	.001500	....	....	
12,800	64,000	.014050	.001950	....	....	
13,200	66,000	.015750	.001700	....	....	
13,600	68,000	.017500	.001750	....	....	
14,000	70,000	.020000	.002500	....	....	
14,400	72,000	.022000	.002000	....	....	
14,800	74,000	.024500	.002500	....	....	
15,200	76,000	.026600	.002100	....	....	
15,600	78,000	.030150	.003550	....	....	
16,000	80,000	.032900	.002750	....	....	
16,400	82,000	.036000	.003100	....	....	
16,800	84,000	.041000	.005000	....	....	
17,200	86,000	.046500	.005500	....	....	
17,600	88,000	.0500	.0035	....	....	
18,000	90,000	.0550	.0050	....	....	
18,400	92,000	.0650	.0100	....	....	
18,800	94,000	.0850	.0200	....	....	
19,160	95,800	.1350	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	95,800
Elastic limit per square inch of original section	do	51,000
Elongation per inch after rupture	inch	0.2150
Elongation per inch under strain at elastic limit	do	.001700
Reduction in diameter at point of rupture	do	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture		″.65 from neck
Character of broken surface		silky
Elongation of inch sections		″.32*, ″.11

No. 2387.

Marks, $^{32}\frac{\mathrm{T\,H}_{12}}{\mathrm{T}_2}$.
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000500	.000150	0.	....	
5,000	25,000	.000650	.000150	0.	....	
6,000	30,000	.000900	.000250	0.	....	
7,000	35,000	.001050	.000150	....	....	
8,000	40,000	.001300	.000250	....	....	
9,000	45,000	.001450	.000150	....	....	
10,000	50,000	.001600	.000150	....	....	
10,200	51,000	.001650	.000050	....	....	Elastic limit.
10,400	52,000	.001800	.000150	....	....	
10,600	53,000	.002500	.000700	....	....	
10,800	54,000	.004250	.001750	....	....	
11,000	55,000	.004900	.000650	....	....	
11,200	56,000	.006000	.001100	....	....	
11,400	57,000	.007500	.001500	....	....	
11,600	58,000	.008250	.000750	....	....	
11,800	59,000	.009000	.000750	....	....	
12,000	60,000	.010400	.001400	....	....	
12,400	62,000	.011850	.001450	....	....	
12,800	64,000	.013000	.001150	....	....	
13,200	66,000	.014750	.001750	....	....	
13,600	68,000	.016750	.002000	....	....	
14,000	70,000	.018750	.002000	....	....	
14,400	72,000	.021050	.002300	....	....	
14,800	74,000	.022750	.001700	....	....	
15,200	76,000	.025250	.002500	....	....	
15,600	78,000	.028000	.002750	....	....	
16,000	80,000	.030600	.002600	....	....	
16,400	82,000	.033500	.002900	....	....	
16,800	84,000	.037500	.004000	....	....	
17,200	86,000	.041500	.004000	....	....	
17,600	88,000	.046750	.005250	....	....	
18,000	90,000	.052500	.005750	....	....	
18,400	92,000	.0600	.0075	....	....	
18,800	94,000	.0650	.0050	....	....	
19,200	96,000	.0900	.0250	....	....	
19,550	97,750	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	97,750
Elastic limit per square inch of original section	do	51,000
Elongation per inch after rupture	inch	0.2200
Elongation per inch under strain at elastic limit	do	.001650
Reduction in diameter at point of rupture	do	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		″.70 from neck
Character of broken surface		silky, 50 per centum; granular, 50 per centum
Elongation of inch sections		″.30*, ″.14

No. 2388.

Marks, $^{32}\overset{T\,H_{12}}{T}$,
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000550	.000200	0.	....	
4,000	20,000	.000700	.000150	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.001000	.000150	0.	....	
7,000	35,000	.001200	.000200	....	....	
8,000	40,000	.001450	.000250	....	....	
9,000	45,000	.001650	.000200	....	....	
9,200	46,000	.001700	.000050	....	....	
9,400	47,000	.001750	.000050	....	....	
9,600	48,000	.001800	.000050	....	....	
9,800	49,000	.001850	.000050	....	....	Elastic limit.
10,000	50,000	.002150	.000300	....	....	
10,200	51,000	.003450	.001300	....	....	
10,400	52,000	.005250	.001800	....	....	
10,600	53,000	.006500	.001250	....	....	
10,800	54,000	.007250	.000750	....	....	
11,000	55,000	.007950	.000700	....	....	
11,200	56,000	.008550	.000600	....	....	
11,400	57,000	.009300	.000750	....	....	
11,600	58,000	.010000	.000700	....	....	
11,800	59,000	.011000	.001000	....	....	
12,000	60,000	.011750	.000750	....	....	
12,400	62,000	.013750	.002000	....	....	
12,800	64,000	.0.5600	.001850	....	....	
13,200	66,000	.017550	.001950	....	....	
13,600	68,000	.020000	.002450	....	....	
14,000	70,000	.021650	.001650	....	....	
14,400	72,000	.024250	.002600	....	....	
14,800	74,000	.026500	.002250	....	....	
15,200	76,000	.029100	.002600	....	....	
15,600	78,000	.032150	.003050	....	....	
16,000	80,000	.038100	.005950	....	....	
16,400	82,000	.039750	.001650	....	....	
16,800	84,000	.044250	.004500	....	....	
17,200	86,000	.050000	.005750	....	....	
17,600	88,000	.0550	.0050	....	....	
18,000	90,000	.0600	.0050	....	....	
18,400	92,000	.0800	.0200	....	....	
18,800	94,000	.1050	.0250	....	....	
18,920	94,600	.1400	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section.................................pounds.. 94,600
Elastic limit per square inch of original section..do... 49,000
Elongation per inch after rupture ....inch.. 0.1900
Elongation per inch under strain at elastic limit...do... '.001850
Reduction in diameter at point of rupture...do... .095
Reduction in area after rupture, per centum of original section 34.0
Position of rupture.. 1 inch from neck
Character of broken surface...............................granular, 60 per centum; silky, 40 per centum
Elongation of inch sections ....''.24*, ''.14

No. 2288.

Marks, $^{32}\frac{\mathrm{T\,H_{13}}}{\mathrm{T_1}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000450	.000200	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000900	.000150	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001200	.000150	0.	....	
9, 000	45, 000	.001350	.000150	0.	....	
10, 000	50, 000	.001550	.000200	0.	....	
10, 200	51, 000	.001650	.000100	....	....	
10, 400	52, 000	.001700	.000050	....	....	Elastic limit.
10, 600	53, 000	.001850	.000150	....	....	
10, 800	54, 000	.003750	.001900	....	....	
11, 000	55, 000	.004750	.001000	....	....	
11, 200	56, 000	.005500	.000750	....	....	
11, 400	57, 000	.006350	.000850	....	....	
11, 600	58, 000	.007250	.000900	....	....	
11, 800	59, 000	.007900	.000650	....	....	
12, 000	60, 000	.008900	.001000	....	....	
12, 400	62, 000	.010600	.001700	....	....	
12, 800	64, 000	.012250	.001650	....	....	
13, 200	66, 000	.014000	.001750	....	....	
13, 600	68, 000	.015600	.001600	....	....	
14, 000	70, 000	.017400	.001800	....	....	
14, 400	72, 000	.019500	.002100	....	....	
14, 800	74, 000	.021750	.002250	....	....	
15, 200	76, 000	.024000	.002250	....	....	
15, 600	78, 000	.026750	.002750	....	....	
16, 000	80, 000	.029750	.003000	....	....	
16, 400	82, 000	.032250	.002500	....	....	
16, 800	84, 000	.036000	.003750	....	....	
17, 200	86, 000	.038750	.002750	....	....	
17, 600	88, 000	.044000	.005250	....	....	
18, 000	90, 000	.049000	.005000	....	....	
18, 400	92, 000	.055750	.006750	....	....	
18, 800	94, 000	.0650	.009250	....	....	
19, 200	96, 000	.0800	.0150	....	....	
19, 600	98, 000	.1050	.0250	....	....	
19, 720	98, 600	.1400	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98, 600
Elastic limit per square inch of original section	do...	52, 000
Elongation per inch after rupture	inch..	0. 1400
Elongation per inch under strain at elastic limit	do ..	.001700
Reduction in diameter at point of rupture	do...	.035
Reduction in area after rupture, per centum of original section		13. 2
Position of rupture		″.92 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.16*, ″.12

No. 2289.

Marks, $32\,\frac{\text{T}\,\text{H}_{18}}{\text{T}_2}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000500	.000200	0.	....	
4, 000	20, 000	.000650	.000150	0.	....	
5, 000	25, 000	.000850	.000200	0.	....	
6, 000	30, 000	.001000	.000150	0.	....	
7, 000	35, 000	.001200	.000200	0.	....	
8, 000	40, 000	.001350	.000150	0.	....	
9, 000	45, 000	.001500	.000150	0.	....	
9, 200	46, 000	.001550	.000050	....	....	
9, 400	47, 000	.001600	.000050	....	....	
9, 600	48, 000	.001600	0.	....	....	
9, 800	49, 000	.001650	.000050	....	....	Elastic limit.
10, 000	50, 000	.001850	.000200	....	....	
10, 200	51, 000	.003900	.002050	....	....	
10, 400	52, 000	.004650	.000750	....	....	
10, 600	53, 000	.005250	.000600	....	....	
10, 800	54, 000	.006300	.001050	....	....	
11, 000	55, 000	.006900	.000600	....	....	
11, 200	56, 000	.007850	.000950	....	....	
11, 400	57, 000	.008600	.000750	....	....	
11, 600	58, 000	.009400	.000800	....	....	
11, 800	59, 000	.010250	.000850	....	....	
12, 000	60, 000	.011250	.001000	....	....	
12, 400	62, 000	.012550	.001800	....	....	
12, 800	64, 000	.014600	.002050	....	....	
13, 200	66, 000	.016500	.001900	....	....	
13, 600	68, 000	.018500	.002000	....	....	
14, 000	70, 000	.020500	.002000	....	....	
14, 400	72, 000	.022800	.002300	....	....	
14, 800	74, 000	.026000	.003200	....	....	
15, 200	76, 000	.029000	.003000	....	....	
15, 600	78, 000	.031750	.002750	....	....	
16, 000	80, 000	.035000	.003250	....	....	
16, 400	82, 000	.039000	.004000	....	....	
16, 800	84, 000	.043750	.004750	....	....	
17, 200	86, 000	.048000	.004250	....	....	
17, 600	88, 000	.055000	.007000	....	....	
18, 000	90, 000	.0700	.0150	....	....	
18, 400	92, 000	.0900	.0200	....	....	
18, 800	94, 000	.1050	.0150	....	....	
18, 950	94, 750	.1450	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 94, 750
Elastic limit per square inch of original section ....do... 49, 000
Elongation per inch after rupture....................................inch.. 0. 2050
Elongation per inch under strain at elastic limit ....do... .001650
Reduction in diameter at point of rupture....................................do... .085
Reduction in area after rupture, per centum of original section.................................... 30. 7
Position of rupture.................................... ".05 from middle of stem
Character of broken surface...granular; dull spot at circumference; opened cracks in surface of stem
Elongation of inch sections .... ".25*,".16

No. 2290.

Marks, $^{32}\underset{T_{3}}{T}\,H_{12}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.000900	.000100	0.	....	
7,000	35,000	.001050	.000150	0.	....	
8,000	40,000	.001250	.000200	0.	....	
9,000	45,000	.001400	.000150	0.	....	
10,000	50,000	.001650	.000250	0.	....	
10,200	51,000	.001700	.000050	....	....	
10,400	52,000	.001750	.000050	....	....	Elastic limit.
10,600	53,000	.002650	.000900	....	....	
10,800	54,000	.004300	.001650	....	....	
11,000	55,000	.005100	.000800	....	....	
11,200	56,000	.006100	.001000	....	....	
11,400	57,000	.006900	.000800	....	....	
11,600	58,000	.008000	.001100	....	....	
11,800	59,000	.008900	.000900	....	....	
12,000	60,000	.009500	.000600	....	....	
12,400	62,000	.010750	.001250	....	....	
12,800	64,000	.012250	.001500	....	....	
13,200	66,000	.014000	.001750	....	....	
13,600	68,000	.015850	.001850	....	....	
14,000	70,000	.018200	.002350	....	....	
14,400	72,000	.020000	.001800	....	....	
14,800	74,000	.022000	.002000	....	....	
15,200	76,000	.024000	.002000	....	....	
15,600	78,000	.027000	.003000	....	....	
16,000	80,000	.029750	.002750	....	....	
16,400	82,000	.032750	.003000	....	....	
16,800	84,000	.036000	.003250	....	....	
17,200	86,000	.040000	.004000	....	....	
17,600	88,000	.044750	.004750	....	....	
18,000	90,000	.050250	.005500	....	....	
18,400	92,000	.0600	.001750	....	....	
18,800	94,000	.0650	.0050	....	....	
19,200	96,000	.0850	.0200	....	....	
19,600	98,000	.1100	.0250	....	....	
19,620	98,100	.1400	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98,100
Elastic limit per square inch of original section	do...	52,000
Elongation per inch after rupture	inch..	0.2250
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		″.80 from neck
Character of broken surface		granular, 60 per centum; dull silky, 40 per centum
Elongation of inch sections		″.30*, ″.15

No. 2291.

Marks, $^{32}\underset{\text{T}_1}{\text{T}}\,\text{H}_{14}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000600	.000100	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001150	.000200	0.	....	
8,000	40,000	.001300	.000150	0.	....	
9,000	45,000	.001450	.000150	0.	....	
10,000	50,000	.001700	.000250	0.	....	Elastic limit.
10,200	51,000	.001950	.000250	....	....	
10,400	52,000	.002400	.000450	....	....	
10,600	53,000	.003500	.001100	....	....	
10,800	54,000	.004250	.000750	....	....	
11,000	55,000	.005000	.000750	....	....	
11,200	56,000	.006000	.001000	....	....	
11,400	57,000	.006900	.000900	....	....	
11,600	58,000	.007750	.000850	....	....	
11,800	59,000	.008400	.000650	....	....	
12,000	60,000	.009000	.000600	....	....	
12,400	62,000	.010700	.001700	....	....	
12,800	64,000	.012250	.001550	....	....	
13,200	66,000	.014050	.001800	....	....	
13,600	68,000	.016000	.001950	....	....	
14,000	70,000	.017750	.001750	....	....	
14,400	72,000	.019600	.001850	....	....	
14,800	74,000	.022250	.002650	....	....	
15,200	76,000	.024500	.002250	....	....	
15,600	78,000	.027000	.002500	....	....	
16,000	80,000	.029750	.002750	....	....	
16,400	82,000	.032350	.002600	....	....	
16,800	84,000	.035750	.003400	....	....	
17,200	86,000	.039250	.003500	....	....	
17,600	88,000	.044000	.004750	....	....	
18,000	90,000	.049500	.005500	....	....	
18,400	92,000	.056000	.006500	....	....	
18,800	94,000	.0700	.0140	....	....	
19,200	96,000	.0850	.0150	....	....	
19,600	98,000	.1150	.0300	....	....	
19,610	98,050	.1300	.0150	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 98,050
Elastic limit per square inch of original section ....do... 50,000
Elongation per inch after rupture ....inch.. 0.1900
Elongation per inch under strain at elastic limit ....do... .001700
Reduction in diameter at point of rupture ....do... .105
Reduction in area after rupture, per centum of original section 37.1
Position of rupture ....¾ inch from neck
Character of broken surface ....granular, 60 per centum; dull, silky center, 40 per centum
Elongation of inch sections ....″.26*, ″.12

No. 2292.

Marks, $^{32}\frac{\mathrm{T\,H}_{14}}{\mathrm{T}_3}$

Diameter, ″.505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000300	.000200	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000850	.000200	0.	....	
6,000	30,000	.001050	.000200	0.	....	
7,000	35,000	.001200	.000150	0.	....	
8,000	40,000	.001450	.000250	.000050	.000050	
9,000	45,000	.001650	.000200	.000050	0.	
10,000	50,000	.001800	.000150	.000050	0.	
10,200	51,000	.001850	.000050	....	....	Elastic limit.
10,400	52,000	.002050	.000200	....	....	
10,600	53,000	.002750	.000700	....	....	
10,800	54,000	.003750	.001000	....	....	
11,000	55,000	.004350	.000600	....	....	
11,200	56,000	.005250	.000900	....	....	
11,400	57,000	.006200	.000950	....	....	
11,600	58,000	.006850	.000650	....	....	
11,800	59,000	.007500	.000650	....	....	
12,000	60,000	.008500	.001000	....	....	
12,400	62,000	.010000	.001500	....	....	
12,800	64,000	.011850	.001850	....	....	
13,200	66,000	.013000	.001150	....	....	
13,600	68,000	.015000	.002000	....	....	
14,000	70,000	.016700	.001700	....	....	
14,400	72,000	.018400	.001700	....	....	
14,800	74,000	.020300	.001900	....	....	
15,200	76,000	.022100	.001800	....	....	
15,600	78,000	.024600	.002500	....	....	
16,000	80,000	.027050	.002450	....	....	
16,400	82,000	.029500	.002450	....	....	
16,800	84,000	.032500	.003000	....	....	
17,200	86,000	.036250	.003750	....	....	
17,600	88,000	.040000	.003750	....	....	
18,000	90,000	.044000	.004000	....	....	
18,400	92,000	.049750	.005750	....	....	
18,800	94,000	.056000	.006250	....	....	
19,200	96,000	.0700	.0140	....	....	
19,600	98,000	.0900	.0200	....	....	
20,000	100,000	.1100	.0200	....	....	
20,020	100,100	.1300	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	100,100
Elastic limit per square inch of original section	do ..	51,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do...	.001850
Reduction in diameter at point of rupture	do...	.085
Reduction in area after rupture, per centum of original section		30.7
Position of rupture		1″.05 from neck
Character of broken surface		granular; small dull spot at circumference
Elongation of inch sections		″.23*, ″.17

No. 2293.

Marks, $^{32}\frac{T}{T_2}H_{14}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2.000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001150	.000200	0.	....	
8,000	40,000	.001300	.000150	0.	....	
9,000	45,000	.001500	.000200	0.	....	
10,000	50,000	.001750	.000250	.000030	.000050	
10,200	51,000	.001800	.000050	....	....	Elastic limit.
10,400	52,000	.002250	.000450	....	....	
10,800	54,000	.004000	.001750	....	....	
11,000	55,000	.004450	.000450	....	....	
11,200	56,000	.005250	.000800	....	....	
11,400	57,000	.006150	.000900	....	....	
11,600	58,000	.007050	.000900	....	....	
11,800	59,000	.007650	.000600	....	....	
12,000	60,000	.008350	.000750	....	....	
12,400	62,000	.010050	.001700	....	....	
12,800	64,000	.011500	.001450	....	....	
13,200	66,000	.013250	.001750	....	....	
13,600	68,000	.015250	.002000	....	....	
14,000	70,000	.016750	.001500	....	....	
14,400	72,000	.018750	.002000	....	....	
14,800	74,000	.020750	.002000	....	....	
15,200	76,000	.022550	.001800	....	....	
15,600	78,000	.025100	.002550	....	....	
16,000	80,000	.028400	.003300	....	....	
16,400	82,000	.030350	.001950	....	....	
16,800	84,000	.034250	.003900	....	....	
17,200	86,000	.037700	.003450	....	....	
17,600	88,000	.042100	.004400	....	....	
18,000	90,000	.047550	.005450	....	....	
18,400	92,000	.054000	.006450	....	....	
18,800	94,000	.0600	.0060	....	....	
19,200	96,000	.0700	.0100	....	....	
19,600	98,000	.1050	.0350	....	....	
19,680	98,400	.1250	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98,400
Elastic limit per square inch of original section	do...	51,000
Elongation per inch after rupture	inch..	0.1550
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.075
Reduction in area after rupture, per centum of original section		27.4
Position of rupture		″.70 from neck
Character of broken surface		granular
Elongation of inch sections		″.21*, ″.10

No. 2383.

Marks, $^{32}\frac{T\,H_{18}}{T_1}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000500	.000150	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000850	.000200	0.	....	
6,000	30,000	.001000	.000150	0.	....	
7,000	35,000	.001150	.000150	....	....	
8,000	40,000	.001300	.000150	....	....	
9,000	45,000	.001450	.000150	....	....	
10,000	50,000	.001600	.000150	....	....	
10,200	51,000	.001650	.000050	....	....	Elastic limit.
10,400	52,000	.001900	.000250	....	....	
10,600	53,000	.003850	.001950	....	....	
10,800	54,000	.005000	.001150	....	....	
11,000	55,000	.005750	.000750	....	....	
11,200	56,000	.006550	.000800	....	....	
11,400	57,000	.007400	.000850	....	....	
11,600	58,000	.008200	.000800	....	....	
11,800	59,000	.009000	.000800	....	....	
12,000	60,000	.009750	.000750	....	....	
12,400	62,000	.011550	.001800	....	....	
12,800	64,000	.013400	.001850	....	....	
13,200	66,000	.014900	.001500	....	....	
13,600	68,000	.016750	.001850	....	....	
14,000	70,000	.018550	.001800	....	....	
14,400	72,000	.021000	.002450	....	....	
14,800	74,000	.023250	.002250	....	....	
15,200	76,000	.025750	.002500	....	....	
15,600	78,000	.028250	.002500	....	....	
16,000	80,000	.031250	.003000	....	....	
16,400	82,000	.034500	.003250	....	....	
16,800	84,000	.038250	.003750	....	....	
17,200	86,000	.042500	.004250	....	....	
17,600	88,000	.048500	.006000	....	....	
18,000	90,000	.054000	.005500	....	....	
18,400	92,000	.0650	.0110	....	....	
18,800	94,000	.0800	.0150	....	....	
19,200	96,000	.1050	.0250	....	....	
19,250	96,250	.1300	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section .... pounds..	96,250
Elastic limit per square inch of original section .... do...	51,000
Elongation per inch after rupture .... inch..	0.2000
Elongation per inch under strain at elastic limit .... do...	.001650
Reduction in diameter at point of rupture .... do...	.105
Reduction in area after rupture, per centum of original section	37.1
Position of rupture	1".10 from neck
Character of broken surface	granular; dull spot at circumference
Elongation of inch sections	".25*, ".15

No. 2384.

Marks, $^{32}\,\frac{\mathrm{T\,H_{u}}}{\mathrm{T_2}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001150	.000200	....	....	
8,000	40,000	.001300	.000150	....	....	
9,000	45,000	.001500	.000200	....	....	
10,000	50,000	.001750	.000150	....	....	Elastic limit.
10,200	51,000	.004000	.002250	....	....	
10,400	52,000	.005000	.001000	....	....	
10,600	53,000	.005900	.000900	....	....	
10,800	54,000	.006650	.000750	....	....	
11,000	55,000	.007250	.000600	....	....	
11,200	56,000	.008100	.000850	....	....	
11,400	57,000	.008750	.000650	....	....	
11,600	58,000	.009750	.001000	....	....	
11,800	59,000	.010700	.000950	....	....	
12,000	60,000	.011250	.000550	....	....	
12,400	62,000	.013000	.001750	....	....	
12,800	64,000	.014700	.001700	....	....	
13,200	66,000	.016250	.001550	....	....	
13,600	68,000	.018600	.002350	....	....	
14,000	70,000	.021000	.002400	....	....	
14,400	72,000	.022650	.001650	....	....	
14,800	74,000	.025000	.002350	....	....	
15,200	76,000	.027750	.002750	....	....	
15,600	78,000	.030300	.002650	....	....	
16,000	80,000	.034050	.003750	....	....	
16,400	82,000	.037800	.003750	....	....	
16,800	84,000	.042250	.004450	....	....	
17,200	86,000	.046750	.004500	....	....	
17,600	88,000	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	88,000
Elastic limit per square inch of original section	do...	50,000
Elongation per inch after rupture	inch..	0.0550
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.015
Redution in area after rupture, per centum of original section		5.7
Position of rupture		½ inch from neck
Character of broken surface		granular
Elongation of inch sections		″.07*, ″.04

No. 2385.

Marks, $^{32}\frac{T}{T_3}E_{18}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001200	.000200	....	....	
8,000	40,000	.001350	.000150	....	....	
9,000	45,000	.001550	.000200	....	....	
9,600	48,000	.001700	.000150	....	....	
9,800	49,000	.001750	.000050	....	....	Elastic limit.
10,000	50,000	.002500	.000750	....	....	
10,200	51,000	.004500	.002000	....	....	
10,400	52,000	.005500	.001000	....	....	
10,600	53,000	.006100	.000600	....	....	
10,800	54,000	.006600	.000500	....	....	
11,000	55,000	.007300	.000700	....	....	
11,200	56,000	.008100	.000800	....	....	
11,400	57,000	.009000	.000900	....	....	
11,600	58,000	.010000	.001000	....	....	
11,800	59,000	.010700	.000700	....	....	
12,000	60,000	.011600	.000900	....	....	
12,400	62,000	.013250	.001650	....	....	
12,800	64,000	.015000	.001750	....	....	
13,200	66,000	.016750	.001750	....	....	
13,600	68,000	.019000	.002250	....	....	
14,000	70,000	.021000	.002000	....	....	
14,400	72,000	.023100	.002100	....	....	
14,800	74,000	.025750	.002650	....	....	
15,200	76,000	.028250	.002500	....	....	
15,600	78,000	.031750	.003500	....	....	
16,000	80,000	.035250	.003500	....	....	
16,400	82,000	.039250	.004000	....	....	
16,800	84,000	.043250	.004000	....	....	
17,200	86,000	.048000	.004750	....	....	
17,600	88,000	.0550	.0070	....	....	
18,000	90,000	.0650	.0100	....	....	
18,400	92,000	.0800	.0150	....	....	
18,800	94,000	.1000	.0200	....	....	
18,980	94,900	.1400	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	94,900
Elastic limit per square inch of original section	do...	49,000
Elongation per inch after rupture	inch..	0.2150
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.105
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		1 inch from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.24*, ″.19

[Additional specimens.]

No. 2444.

Marks, $^{82}\underset{T_4}{T}\,H_{18}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000900	.000150	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001250	.000200	0.	....	
9, 000	45, 000	.001450	.000200	0.	....	
10, 000	50, 000	.001650	.000200	0.	....	
10, 200	51, 000	.001650	0.	....	....	
10, 400	52, 000	.001750	.000100	....	....	
10, 600	53, 000	.001800	.000050	....	....	
10, 800	54, 000	.001900	.000100	....	....	
11, 000	55, 000	.001950	.000050	....	....	Elastic limit.
11, 200	56, 000	.002100	.000150	....	....	
11, 400	57, 000	.005600	.003500	....	....	
11, 600	58, 000	.006500	.000900	....	....	
11, 800	59, 000	.007900	.001400	....	....	
12, 000	60, 000	.008800	.000900	....	....	
12, 400	62, 000	.009900	.001100	....	....	
12, 800	64, 000	.011900	.002000	....	....	
13, 200	66, 000	.013750	.001850	....	....	
13, 600	68, 000	.015750	.002000	....	....	
14, 000	70, 000	.017650	.001900	....	....	
14, 400	72, 000	.020100	.002450	....	....	
14, 800	74, 000	.022550	.002450	....	....	
15, 200	76, 000	.025000	.002450	....	....	
15, 600	78, 000	.027500	.002500	....	....	
16, 000	80, 000	.031250	.003750	....	....	
16, 400	82, 000	.034750	.003500	....	....	
16, 800	84, 000	.038750	.004000	....	....	
17, 200	86, 000	.043550	.004800	....	....	
17, 600	88, 000	.050000	.006440	....	....	
18, 000	90, 000	.0550	.0050	....	....	
18, 400	92, 000	.0650	.0100	....	....	
18, 800	94, 000	.0900	.0250	....	....	
19, 160	95, 800	.1500	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	95, 800
Elastic limit per square inch of original section	do	55, 000
Elongation per inch after rupture	inch	0. 2600
Elongation per inch under strain at elastic limit	do	.001950
Reduction in diameter at point of rupture	do	.165
Reduction in area after rupture, per centum of original section		54. 6
Position of rupture		1″.05 from neck
Character of broken surface		silky
Elongation of inch sections		″.17, ″.35*

No. 2445.

Marks, $^{32}\underset{T_5}{T}H_{15}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000350	.000200	0.	....	
3, 000	15, 000	.000500	.000150	0.	....	
4, 000	20, 000	.000600	.000100	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000950	.000200	0.	....	
7, 000	35, 000	.001100	.000150	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001450	.000200	....	....	
10, 000	50, 000	.001600	.000150	....	....	
10, 200	51, 000	.001650	.000050	....	....	
10, 400	52, 000	.001650	0.	....	....	
10, 600	53, 000	.001700	.000050	....	....	
10, 800	54, 000	.001750	.000050	....	....	Elastic limit.
11, 000	55, 000	.003550	.001800	....	....	
11, 200	56, 000	.005100	.001550	....	....	
11, 400	57, 000	.006300	.001200	....	....	
11, 600	58, 000	.007250	.000950	....	....	
11, 800	59, 000	.008000	.000750	....	....	
12, 000	60, 000	.009000	.001000	....	....	
12, 400	62, 000	.010800	.001800	....	....	
12, 800	64, 000	.012200	.001400	....	....	
13, 200	66, 000	.014250	.002050	....	....	
13, 600	68, 000	.016750	.002500	....	....	
14, 000	70, 000	.019250	.002500	....	....	
14, 400	72, 000	.021000	.001750	....	....	
14, 800	74, 000	.023000	.002000	....	....	
15, 200	76, 000	.026100	.003100	....	....	
15, 600	78, 000	.029150	.003050	....	....	
16, 000	80, 000	.032600	.003450	....	....	
16, 400	82, 000	.036500	.003900	....	....	
16, 800	84, 000	.040000	.003500	....	....	
17, 200	86, 000	.045000	.005000	....	....	
17, 600	88, 000	.052000	.007000	....	....	
18, 000	90, 000	.0600	.0080	....	....	
18, 400	92, 200	.0700	.0100	....	....	
18, 800	94, 000	.0950	.0250	....	....	
19, 010	95, 050	.1350	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	95, 050
Elastic limit per square inch of original section	do ...	54, 000
Elongation per inch after rupture	inch..	0. 2500
Elongation per inch under strain at elastic limit	do ...	.001750
Reduction in diameter at point of rupture	do ...	.135
Reduction in area after rupture, per centum of original section		46. 2
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		".17, ".33*

No. 2446.

Marks, $^{32}\underset{T_6}{T}\,H_{13}$
Diameter, ″.506.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000550	.000100	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000800	.000100	0.	....	
7,000	35,000	.000950	.000150	0.	....	
8,000	40,000	.001200	.000250	0.	....	
9,000	45,000	.001350	.000150	0.	....	
10,000	50,000	.001550	.000200	0.	....	
10,200	51,000	.001600	.000050	....	....	
10,400	52,000	.001600	0.	....	....	
10,600	53,000	.001650	.000050	....	....	
10,800	54,000	.001700	.000050	....	....	Elastic limit.
11,000	55,000	.003750	.002050	....	....	
11,200	56,000	.004900	.001150	....	....	
11,400	57,000	.005900	.001000	....	....	
11,600	58,000	.006500	.000600	....	....	
11,800	59,000	.007750	.001250	....	....	
12,000	60,000	.008800	.001050	....	....	
12,400	62,000	.010250	.001450	....	....	
12,800	64,000	.011750	.001500	....	....	
13,200	66,000	.013750	.002000	....	....	
13,600	68,000	.016150	.002400	....	....	
14,000	70,000	.018400	.002250	....	....	
14,400	72,000	.021000	.002650	....	....	
14,800	74,000	.023500	.002500	....	....	
15,200	76,000	.026100	.002600	....	....	
15,600	78,000	.028750	.002650	....	....	
16,000	80,000	.031250	.002500	....	....	
16,400	82,000	.034750	.003500	....	....	
16,800	84,000	.038700	.003950	....	....	
17,200	86,000	.043500	.004800	....	....	
17,600	88,000	.050000	.006500	....	....	
18,000	90,000	.0550	.0050	....	....	
18,400	92,000	.0650	.0100	....	....	
18,800	94,000	.0850	.0200	....	....	
19,120	95,600	.1450	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	95,600
Elastic limit per square inch of original section ....do...	54,000
Elongation per inch after rupture ....inch..	0.2500
Elongation per inch under strain at elastic limit................do...	.001700
Reduction in diameter at point of rupture................do...	.156
Reduction in area after rupture, per centum of original section................	51.9
Position of rupture................	″.80 from neck
Character of broken surface................	silky
Elongation of inch sections	″.35+, ″.15

No. 2457.

Marks, $^{32}\frac{\mathrm{TH}_{16}}{\mathrm{T}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000500	.000200	0.	....	
4, 000	20, 000	.000650	.000150	0.	....	
5, 000	25, 000	.000800	.000150	0.	....	
6, 000	30, 000	.001000	.000200	0.	....	
7, 000	35, 000	.001200	.000200	....	....	
8, 000	40, 000	.001350	.000150	....	....	
9, 000	45, 000	.001500	.000150	....	....	
10, 000	50, 000	.001700	.000200	....	....	Elastic limit.
10, 200	51, 000	.003500	.001800	....	....	
10, 400	52, 000	.004750	.001250	....	....	
10, 600	53, 000	.005600	.000950	....	....	
10, 800	54, 000	.006100	.000500	....	....	
11, 000	55, 000	.006800	.000700	....	....	
11, 200	56, 000	.007650	.000850	....	....	
11, 400	57, 000	.008500	.000850	....	....	
11, 600	58, 000	.009200	.000700	....	....	
11, 800	59, 000	.010000	.000800	....	....	
12, 000	60, 000	.010700	.000700	....	....	
12, 400	62, 000	.012550	.001850	....	....	
12, 800	64, 000	.014000	.001450	....	....	
13, 200	66, 000	.016000	.002000	....	....	
13, 600	68, 000	.018000	.002000	....	....	
14, 000	70, 000	.020000	.002000	....	....	
14, 400	72, 000	.022250	.002250	....	....	
14, 800	74, 000	.024250	.002000	....	....	
15, 200	76, 000	.026550	.002300	....	....	
15, 600	78, 000	.029500	.002950	....	....	
16, 000	80, 000	.032250	.002750	....	....	
16, 400	82, 000	.036000	.003750	....	....	
16, 800	84, 000	.039500	.003500	....	....	
17, 200	86, 000	.044000	.004500	....	....	
17, 600	88, 000	.049600	.005600	....	....	
18, 000	90, 000	.0550	.0054	....	....	
18, 400	92, 000	.0600	.0050	....	....	
18, 800	94, 000	.0800	.0200	....	....	
19. 200	96, 000	.1000	.0200	....	....	
19, 300	96, 500	.1350	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................................pounds.. 96, 500
Elastic limit per square inch of original section..do... 50, 000
Elongation per inch after rupture...inch.. 0.1450
Elongation per inch under strain at elastic limit..do... .001700
Reduction in diameter at point of rupture..do... .045
Reduction in area after rupture, per centum of original section.............................. 16.9
Position of rupture...1 inch from neck
Character of broken surface..................granular; radiating from a dull spot at the circumference
Elongation of inch sections...″.19, ″.10

No. 2458.

Marks, $^{32}\frac{\mathrm{T\,H}_{16}}{\mathrm{T}_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000600	.000200	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001100	.000150	....	....	
8,000	40,000	.001300	.000200	....	....	
9,000	45,000	.001500	.000200	....	....	
9,600	48,000	.001600	.000100	....	....	
9,800	49,000	.001650	.000050	....	....	
10,000	50,000	.001700	.000050	....	....	
10,200	51,000	.001700	0.	....	....	
10,400	52,000	.001850	.000150	....	....	Elastic limit.
10,600	53,000	.003700	.001850	....	....	
10,800	54,000	.004500	.000800	....	....	
11,000	55,000	.005750	.001250	....	....	
11,200	56,000	.006200	.000450	....	....	
11,400	57,000	.007050	.000850	....	....	
11,600	58,000	.007750	.000700	....	....	
11,800	59,000	.008500	.000750	....	....	
12,000	60,000	.009150	.000650	....	....	
12,400	62,000	.011000	.001850	....	....	
12,800	64,000	.012550	.001550	....	....	
13,200	66,000	.014000	.001450	....	....	
13,600	68,000	.015600	.001600	....	....	
14,000	70,000	.017500	.001900	....	....	
14,400	72,000	.019500	.002000	....	....	
14,800	74,000	.021500	.002000	....	....	
15,200	76,000	.023500	.002000	....	....	
15,600	78,000	.026250	.002750	....	....	
16,000	80,000	.029000	.002750	....	....	
16,400	82,000	.032000	.003000	....	....	
16,800	84,000	.035250	.003250	....	....	
17,200	86,000	.038500	.003250	....	....	
17,600	88,000	.044250	.005750	....	....	
18,000	90,000	.049000	.004750	....	....	
18,400	92,000	.055000	.006000	....	....	
18,800	94,000	.0600	.0050	....	....	
19,200	96,000	.0750	.0150	....	....	
19,600	98,000	.1000	.0250	....	....	
19,660	98,300	.1200	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98,300
Elastic limit per square inch of original section	do...	52,000
Elongation per inch after rupture	inch..	0.1650
Elongation per inch under strain at elastic limit	do...	.001850
Reduction in diameter at point of rupture	do...	.075
Reduction in area after rupture, per centum of original section		27.4
Position of rupture		″.45 from neck
Character of broken surface		granular; small dull spot at the circumference
Elongation of inch sections		″.22*, ″.11

No. 2459.

Marks, $^{32}\frac{\mathrm{T\,H}_{16}}{\mathrm{T}_3}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	**Initial load.**
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001200	.000200	....	....	
8,000	40,000	.001350	.000150	....	....	
9,000	45,000	.001550	.000200	....	....	
10,000	50,000	.001750	.000200	....	....	**Elastic limit.**
10,200	51,000	.001950	.000200	....	....	
10,400	52,000	.002550	.000600	....	....	
10,600	53,000	.003550	.000100	....	....	
10,800	54,000	.004800	.001250	....	....	
11,000	55,000	.005500	.000700	....	....	
11,200	56,000	.006500	.001000	....	....	
11,400	57,000	.007200	.000700	....	....	
11,600	58,000	.007900	.000700	....	....	
11,800	59,000	.008650	.000750	....	....	
12,000	60,000	.009400	.000750	....	....	
12,400	62,000	.011050	.001650	....	....	
12,800	64,000	.012500	.001450	....	....	
13,200	66,000	.014150	.001650	....	....	
13,600	68,000	.016000	.001850	....	....	
14,000	70,000	.017250	.001250	....	....	
14,400	72,000	.020600	.003350	....	....	
14,800	74,000	.022500	.001900	....	....	
15,200	76,000	.025000	.002500	....	....	
15,600	78,000	.027000	.002000	....	....	
16,000	80,000	.029500	.002500	....	....	
16,400	82,000	.032550	.003150	....	....	
16,800	84,000	.036250	.003700	....	....	
17,200	86,000	.040000	.003750	....	....	
17,580	87,900	....	....	....	....	**Tensile strength.**

General summary.

Tensile strength per square inch of original section	pounds..	**87,900**
Elastic limit per square inch of original section	do...	**50,000**
Elongation per inch after rupture	inch..	**0.0850**
Elongation per inch under strain at elastic limit	do...	**.001750**
Reduction in diameter at point of rupture	do...	**.015**
Reduction in area after rupture, per centum of original section		**5.7**
Position of rupture		**″.85 from neck**
Character of broken surface		**granula**
Elongation of inch sections		**″.05*, ″.0**

[Additional specimens.]

No. 2449.

Marks, $^{32}\frac{T}{T_4}H_{16}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000600	.000200	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001100	.000200	0.	....	
8,000	40,000	.001300	.000200	0.	....	
9,000	45,000	.001500	.000200	0.	....	
10,000	50,000	.001650	.000150	....	....	
10,200	51,000	.001700	.000050	....	....	
10,400	52,000	.001800	.000100	....	....	Elastic limit.
10,600	53,000	.002250	.000450	....	....	
10,800	54,000	.003750	.001500	....	....	
11,000	55,000	.004900	.001150	....	....	
11,200	56,000	.005900	.001000	....	....	
11,400	57,000	.006500	.000600	....	....	
11,600	58,000	.007250	.000750	....	....	
11,800	59,000	.008500	.001250	....	....	
12,000	60,000	.009550	.001050	....	....	
12,400	62,000	.010750	.001200	....	....	
12,800	64,000	.012100	.001350	....	....	
13,200	66,000	.013800	.001700	....	....	
13,600	68,000	.015750	.001950	....	....	
14,000	70,000	.017750	.002000	....	....	
14,400	72,000	.019750	.002000	....	....	
14,800	74,000	.022150	.002400	....	....	
15,200	76,000	.024050	.001900	....	....	
15,600	78,000	.026500	.002450	....	....	
16,000	80,000	.029350	.002850	....	....	
16,400	82,000	.032650	.003300	....	....	
16,800	84,000	.036000	.003350	....	....	
17,200	86,000	.040600	.004600	....	....	
17,600	88,000	.044050	.003450	....	....	
18,000	90,000	.050250	.006200	....	....	
18,400	92,000	.0550	.004750	....	....	
18,800	94,000	.0650	.0100	....	....	
19,200	96,000	0800	.0150	....	....	
19,600	98,000	.1050	.0250	....	....	
19,640	98,200	.1300	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98,200
Elastic limit per square inch of original section	do...	52,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.105
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		″.65 from neck
Character of broken surface		silky; trace of granulation
Elongation of inch sections		″.29*, ″.11

No. 2450.

Marks, $\underset{\mathrm{T}_8}{^{32}\mathrm{T\,H}_{16}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000500	.000250	0.	....	
4, 000	20, 000	.000600	.000100	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000900	.000150	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001200	.000150	0.	....	
9, 000	45, 000	.001350	.000150	0.	....	
10, 000	50, 000	.001550	.000200	0.	....	
10, 200	51, 000	.001600	.000050	....	....	
10, 400	52, 000	.001700	.000100	....	....	Elastic limit.
10, 600	53, 000	.001900	.000200	....	....	
10, 800	54, 000	.003400	.001500	....	....	
11, 000	55, 000	.004350	.000950	....	....	
11, 200	56, 000	.005300	.000950	....	....	
11, 400	57, 000	.006100	.000800	....	....	
11, 600	58, 000	.006750	.000650	....	....	
11, 800	59, 000	.007500	.000750	....	....	
12, 000	60, 000	.008500	.001000	....	....	
12, 400	62, 000	.009850	.001350	....	....	
12, 800	64, 000	.011350	.001500	....	....	
13, 200	66, 000	.012900	.001550	....	....	
13, 600	68, 000	.015200	.002300	....	....	
14, 000	70, 000	.017000	.001800	....	....	
14, 400	72, 000	.019000	.002000	....	....	
14, 800	74, 000	.020900	.001900	....	....	
15, 200	76, 000	.023000	.002100	....	....	
15, 600	78, 000	.025500	.002500	....	....	
16, 000	80, 000	.027900	.002400	....	....	
16, 400	82, 000	.030750	.002850	....	....	
16, 800	84, 000	.034000	.003250	....	....	
17, 200	86, 000	.037550	.003550	....	....	
17, 600	88, 000	.042000	.004450	....	....	
18, 000	90, 000	.046900	.004900	....	....	
18, 400	92, 000	.053500	.006600	....	....	
18, 800	94, 000	.0600	.0065	....	....	
19, 200	96, 000	.0750	.0150	....	....	
19, 600	98, 000	.0950	.0200	....	....	
19, 800	99, 000	.1450	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	99, 000
Elastic limit per square inch of original section..........do...	52, 000
Elongation per inch after rupture..........inch..	0. 2200
Elongation per inch under strain at elastic limit..........do...	.001700
Reduction in diameter at point of rupture..........do...	.105
Reduction in area after rupture, per centum of original section..........	37.1
Position of rupture..........	at middle of stem
Character of broken surface..........	silky; trace of granulation
Elongation of inch sections..........	″.21*, ″.23*

No. 2450*a*.

Marks, $^{32}\frac{T\,H_{16}}{T_6}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000550	.000150	0.	....	
5, 000	25, 000	.000700	.000150	0.	....	
6, 000	30, 000	.000850	.000150	0.	....	
7, 000	35, 000	.001000	.000150	0.	....	
8, 000	40, 000	.001150	.000150	0.	....	
9, 000	45, 000	.001350	.000200	0.	....	
10, 000	50, 000	.001550	.000200	....	....	
10, 200	51, 000	.001600	.000050	....	....	Elastic limit.
10, 400	52, 000	.002100	.000500	....	....	
10, 600	53, 000	.003550	.001450	....	....	
10, 800	54, 000	.004700	.001150	....	....	
11, 000	55, 000	.005250	.000550	....	....	
11, 200	56, 000	.006000	.000750	....	....	
11, 400	57, 000	.006950	.000950	....	....	
11, 600	58, 000	.007700	.000750	....	....	
11, 800	59, 000	.008500	.000800	....	....	
12, 000	60, 000	.009500	.001000	....	....	
12, 400	62, 000	.010700	.001200	....	....	
12, 800	64, 000	.012350	.001650	....	....	
13, 200	66, 000	.014350	.002000	....	....	
13, 600	68, 000	.016200	.001850	....	....	
14, 000	70, 000	.018100	.001900	....	....	
14, 400	72, 000	.020000	.001900	....	....	
14, 800	74, 000	.022500	.002500	....	....	
15, 200	76, 000	.024500	.002000	....	....	
15, 600	78, 000	.027100	.002600	....	....	
16, 000	80, 000	.029700	.002600	....	....	
16, 400	82, 000	.032900	.003200	....	....	
16, 800	84, 000	.036500	.003600	....	....	
17, 200	86, 000	.040350	.003850	....	....	
17, 600	88, 000	.045350	.005000	....	....	
18, 000	90, 000	.051000	.005650	....	....	
18, 400	92, 000	.0550	.0040	....	....	
18, 800	94, 000	.0650	.0100	....	....	
19, 200	96, 000	.0900	.0250	....	....	
19, 590	97, 950	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	97, 950
Elastic limit per square inch of original section	do...	51, 000
Elongation per inch after rupture	inch..	0. 1950
Elongation per inch under strain at elastic limit	do...	.001600
Reduction in diameter at point of rupture	do...	.095
Reduction in area after rupture, per centum of original section		34. 0
Position of rupture		″.80 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.12, ″.27*

No. 2460

Marks, $^{32}\text{T}^{\text{H}_{17}}_{\text{T}_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000700	.000250	0.	....	
5,000	25,000	.000950	.000250	0.	....	
6,000	30,000	.001100	.000150	0.	....	
7,000	35,000	.001250	.000150	0.	....	
8,000	40,000	.001400	.000150	....	....	
9,000	45,000	.001600	.000200	....	....	
10,000	50,000	.002000	.000400	....	....	
10,200	51,000	.002100	.000100	....	....	
10,400	52,000	.002150	.000050	....	....	Elastic limit.
10,600	53,000	.002550	.000400	....	....	
10,800	54,000	.004000	.001450	....	....	
11,000	55,000	.004750	.000750	....	....	
11,200	56,000	.005650	.000900	....	....	
11,400	57,000	.006500	.000850	....	....	
11,600	58,000	.007250	.000750	....	....	
11,800	59,000	.008150	.000900	....	....	
12,000	60,000	.009000	.000850	....	....	
12,400	62,000	.010500	.001500	....	....	
12,800	64,000	.012000	.001500	....	....	
13,200	66,000	.013750	.001750	....	....	
13,600	68,000	.015150	.001400	....	....	
14,000	70,000	.017000	.001850	....	....	
14,400	72,000	.019350	.002350	....	....	
14,800	74,000	.021250	.001900	....	....	
15,200	76,000	.023250	.002000	....	....	
15,600	78,000	.025600	.002350	....	....	
16,000	80,000	.028050	.002450	....	....	
16,400	82,000	.031050	.003000	....	....	
16,800	84,000	.034250	.003200	....	....	
17,200	86,000	.037000	.002750	....	....	
17,600	88,000	.042250	.005250	....	....	
18,000	90,000	.046000	.003750	....	....	
18,400	92,000	.0500	.0040	....	....	
18,800	94,000	.0550	.0050	....	....	
19,200	96,000	.0650	.0100	....	....	
19,600	98,000	.0900	.0250	....	....	
19,920	99,600	.1300	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	99,600
Elastic limit per square inch of original section	do...	52,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do...	.002150
Reduction in diameter at point of rupture	do...	.105
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		″.55 from neck
Character of broken surface		granular, 70 per centum; silky, 30 per centum
Elongation of inch sections		″.25*, ″.15

No. 2461.

Marks, $^{82}\frac{T}{T_2}H_{17}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000200	.000200	0.		
2, 000	10, 000	.000400	.000200	0.	....	
3, 000	15, 000	.000550	.000150	0.	....	
4, 000	20, 000	.000750	.000200	0.	....	
5, 000	25, 000	.000900	.000150	0.	....	
6, 000	30, 000	.001100	.000200	0.	....	
7, 000	35, 000	.001250	.000150	....	....	
8, 000	40, 000	.001400	.000150	....	....	
9, 000	45, 000	.001550	.000150	....	....	
10, 000	50, 000	.001800	.000250	....	....	
10, 200	51, 000	.001800	0.	....	....	
10, 400	52, 000	.001850	.000050	....	....	
10. 600	53, 000	.001900	.000050	....	....	
10, 800	54, 000	.002000	.000100	....	....	Elastic limit.
11, 000	55, 000	.004200	.002200	....	....	
11, 200	56, 000	.004900	.000700	....	....	
11, 400	57, 000	.006000	.001100	....	....	
11, 600	58, 000	.006500	.000500	....	....	
11, 800	59, 000	.007250	.000750	....	....	
12, 000	60, 000	.007900	.000650	....	....	
12, 400	62, 000	.009700	.001800	....	....	
12, 800	64, 000	.011250	.001550	....	....	
13, 200	66, 000	.012750	.001500	....	....	
13, 600	68, 000	.014300	.001550	....	....	
14, 000	70, 000	.015850	.001550	....	....	
14, 400	72, 000	.018000	.002150	....	....	
14, 800	74, 000	.019750	.001750	....	....	
15, 200	76, 000	.022200	.002450	....	....	
15, 600	78, 000	.024500	.002300	....	....	
16, 000	80, 000	.026750	.002250	....	....	
16, 400	82, 000	.029500	.002750	....	....	
16, 800	84, 000	.032250	.002750	....	....	
17, 200	86, 000	.035600	.003350	....	....	
17, 600	88, 000	.039000	.003400	....	....	
18, 000	90, 000	.043050	.004050	....	....	
18, 400	92, 000	.048500	.005450	....	....	
18, 800	94, 000	.0550	.0065	....	....	
19, 200	96, 000	.0600	.0050	....	....	
19, 600	98, 000	.0700	.0100	....	....	
20, 000	100, 000	.1000	.0300	....	....	
20, 200	101, 000	.1800	.0800	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	101, 000
Elastic limit per square inch of original section..........do...	54, 000
Elongation per inch after rupture..........inch..	0. 2000
Elongation per inch under strain at elastic limit..........do...	.002000
Reduction in diameter at point of rupture..........do...	.115
Reduction in area after rupture, per centum of original section..........	40. 3
Position of rupture..........	".60 from neck
Character of broken surface..........	silky
Elongation of inch sections..........	".27*, ".13

No. 2462.

Marks, $^{32}\frac{\mathrm{T}\,\mathrm{H}_{17}}{\mathrm{T}_3}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000600	.000250	0.	....	
4,000	20,000	.000800	.000200	0.	....	
5,000	25,000	.001000	.000200	0.	....	
6,000	30,000	.001150	.000150	0.	....	
7,000	35,000	.001300	.000150	....	....	
8,000	40,000	.001450	.000150	....	....	
9,000	45,000	.001600	.000150	....	....	
9,600	48,000	.001700	.000100	....	....	
9,800	49,000	.001750	.000050	....	....	
10,000	50,000	.001800	.000050	....	....	
10,200	51,000	.001850	.000050	....	....	Elastic limit.
10,400	52,000	.002100	.000250	....	....	
10,600	53,000	.003500	.001400	....	....	
10,800	54,000	.005150	.001650	....	....	
11,000	55,000	.006250	.001100	....	....	
11,200	56,000	.007000	.000750	....	....	
11,400	57,000	.007600	.000600	....	....	
11,600	58,000	.008250	.000650	....	....	
11,800	59,000	.008900	.000650	....	....	
12,000	60,000	.009600	.000700	....	....	
12,400	62,000	.011700	.002100	....	....	
12,800	64,000	.013200	.001500	....	....	
13,200	66,000	.014750	.001550	....	....	
13,600	68,000	.016050	.001300	....	....	
14,000	70,000	.018000	.001950	....	....	
14,400	72,000	.020000	.002000	....	....	
14,800	74,000	.022000	.002000	....	....	
15,200	76,000	.024050	.002050	....	....	
15,600	78,000	.026500	.002450	....	....	
16,000	80,000	.029250	.002750	....	....	
16,400	82,000	.032050	.002800	....	....	
16,800	84,000	.035500	.003450	....	....	
17,200	86,000	.039000	.003500	....	....	
17,600	88,000	.044000	.005000	....	....	
18,000	90,000	.049500	.005500	....	....	
18,400	92,000	.0550	.0055	....	....	
18,800	94,000	.0600	.0050	....	....	
19,200	96,000	.0750	.0150	....	....	
19,600	98,000	.1000	.0250	....	....	
19,710	98,550	.1250	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98,550
Elastic limit per square inch of original section	do...	51,000
Elongation per inch after rupture	inch..	0.1800
Elongation per inch under strain at elastic limit	do...	.001850
Reduction in diameter at point of rupture	do...	.105
Reduction in area after rupture, per centum of original section		37.1
Position of rupture		″.62 from neck
Character of broken surface		granular, 50 per centum; silky, 50 per centum
Elongation of inch sections		″.27*, ″.09

No. 2392.

Marks, $^{32}\frac{\mathrm{T\,H}_{18}}{\mathrm{T}_1}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	. 000100	. 000100	0.	....	
2, 000	10, 000	. 000250	. 000150	0.	....	
3, 000	15, 000	. 000400	. 000150	0.	....	
4, 000	20, 000	. 000600	. 000200	0.	....	
5, 000	25, 000	. 000750	. 000150	0.	....	
6, 000	30, 000	. 000900	. 000150	0.	....	
7, 000	35, 000	. 001050	. 000150	....	....	
8, 000	40, 000	. 001200	. 000150	....	....	
9, 000	45, 000	. 001400	. 000200	....	....	
10, 000	50, 000	. 001600	. 000200	....	....	
10, 200	51, 000	. 001700	. 000100	....	....	
10, 400	52, 000	. 001750	. 000050	....	....	
10, 600	53, 000	. 001850	. 000100	....	....	Elastic limit
10, 800	54, 000	. 002350	. 000500	....	....	
11, 000	55, 000	. 003500	. 001150	....	....	
11, 200	56, 000	. 004250	. 000750	....	....	
11, 400	57, 000	. 005150	. 000900	....	....	
11, 600	58, 000	. 006150	. 001000	....	....	
11, 800	59, 000	. 007050	. 000900	....	....	
12, 000	60, 000	. 007650	. 000600	....	....	
12, 400	62, 000	. 009250	. 001600	....	....	
12, 800	64, 000	. 011000	. 001750	....	....	
13, 200	66, 000	. 012850	. 001850	....	....	
13, 600	68, 000	. 014600	. 002250	....	....	
14, 000	70, 000	. 016500	. 001900	....	....	
14, 400	72, 000	. 018150	. 001650	....	....	
14, 800	74, 000	. 020000	. 001850	....	....	
15, 200	76, 000	. 022250	. 002250	....	....	
15, 600	78, 000	. 024350	. 002100	....	....	
16, 000	80, 000	. 027000	. 002650	....	....	
16, 400	82, 000	. 029550	. 002550	....	....	
16, 800	84, 000	. 032500	. 002950	....	....	
17, 200	86, 000	. 036550	. 004050	....	....	
17, 600	88, 000	. 040000	. 003450	....	....	
18, 000	90, 000	. 045000	. 005000	....	....	
18, 400	92, 000	. 051000	. 006000	....	....	
18, 800	94, 000	. 0550	. 0040	....	....	
19, 050	95, 250	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	95, 250
Elastic limit per square inch of original section	do...	53, 000
Elongation per inch after rupture	inch..	0. 0550
Elongation per inch under strain at elastic limit	do...	. 001850
Reduction in diameter at point of rupture	do...	. 025
Reduction in area after rupture, per centum of original section		9. 5
Position of rupture		".55 from neck
Character of broken surface		granular
Elongation of inch sections		".06*, ".05

No. 2393.

Marks, $^{32}\underset{T_2}{T}\,H_{18}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	—.000050	—.000030	
2, 000	10, 000	.000250	.000150	—.000050	0.	
3, 000	15, 000	.000350	.000100	—.000050	0.	
4, 000	20, 000	.000500	.000150	—.000050	0.	
5, 000	25, 000	.000750	.000250	—.000050	0.	
6, 000	30, 000	.000900	.000150	—.000050	0.	
7, 000	35, 000	.001100	.000200	....	....	
8, 000	40, 000	.001300	.000200	....	....	
9, 000	45, 000	.001450	.000150	....	....	
10, 000	50, 000	.001600	.000150	....	....	
10. 200	51, 000	.001650	.000050	....	....	
10, 400	52, 000	.001750	.000100	....	....	
10, 600	53, 000	.001850	.000100	....	....	Elastic limit.
10, 800	54, 000	.002350	.000500	....	....	
11, 000	55, 000	.003250	.000900	....	....	
11, 200	56, 000	.004500	.001250	....	....	
11, 400	57, 000	.005650	.001150	....	....	
11, 600	58, 000	.006330	.000700	....	....	
11. 800	59, 000	.007150	.000800	....	....	
12, 000	60. 000	.008050	.000900	....	....	
12, 400	62, 000	.009700	.001650	....	....	
12, 800	64, 000	.011500	.001800	....	....	
13, 200	66, 000	.013350	.001850	....	....	
13, 600	68, 000	.015150	.001800	....	....	
14, 000	70, 000	.017050	.001900	....	....	
14, 400	72, 000	.019050	.002000	....	....	
14, 800	74, 000	.021000	.001950	....	....	
15, 200	76, 000	.023000	.002000	....	....	
15, 600	78, 000	.025600	.002600	....	....	
16, 000	80, 000	.028250	.002650	....	....	
16, 400	82, 000	.031050	.002800	....	....	
16, 800	84, 000	.034500	.003450	....	....	
17, 200	86, 000	.038000	.003500	....	....	
17, 600	88, 000	.042550	.004550	....	....	
18, 000	90, 000	.047500	.004950	....	....	
18, 400	92, 000	.0500	.0025	....	....	
18, 800	94, 000	.0600	.0100	....	....	
19, 200	96, 000	.0800	.0200	....	....	
19, 600	98, 000	.0950	.0150	....	....	
19, 780	98, 900	.1350	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98, 900
Elastic limit per square inch of original section	do...	53, 000
Elongation per inch after rupture	inch..	0. 1600
Elongation per inch under strain at elastic limit	do...	.001850
Reduction in diameter at point of rupture	do...	.055
Reduction in area after rupture, per centum of original section		20. 5
Position of rupture		″.85 from neck
Character of broken surface		granular
Elongation of inch sections		″.18*, ″.14

No. 2394.

Marks, $^{32}\text{T}^{\text{H}_{18}}_{\text{T}_3}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000350	.000100	0.	....	
4,000	20,000	.000500	.000150	0.	....	
5,000	25,000	.000600	.000100	0.	....	
6,000	30,000	.000750	.000150	0.	....	
7,000	35,000	.001000	.000250	....	....	
8,000	40,000	.001150	.000150	....	....	
9,000	45,000	.001400	.000250	....	....	
10,000	50,000	.001550	.000150	....	....	
10,200	51,000	.001600	.000050	....	....	
10,400	52,000	.001600	0.	....	....	
10,600	53,000	.001650	.000050	....	....	
10,800	54,000	.001750	.000100	....	....	Elastic limit.
11,000	55,000	.002100	.000350	....	....	
11,200	56,000	.003550	.001450	....	....	
11,400	57,000	.005500	.001950	....	....	
11,600	58,000	.007000	.001500	....	....	
11,800	59,000	.007750	.000750	....	....	
12,000	60,000	.008500	.000750	....	....	
12,400	62,000	.010000	.001500	....	....	
12,800	64,000	.012000	.002000	....	....	
13,200	66,000	.013550	.001550	....	....	
13,600	68,000	.015600	.002050	....	....	
14,000	70,000	.017600	.002000	....	....	
14,400	72,000	.019650	.002050	....	....	
14,800	74,000	.021800	.002150	....	....	
15,200	76,000	.024550	.002750	....	....	
15,600	78,000	.027250	.002700	....	....	
16,000	80,000	.030100	.002850	....	....	
16,400	82,000	.033550	.003450	....	....	
16,800	84,000	.037500	.003950	....	....	
17,200	86,000	.041750	.004250	....	....	
17,600	88,000	.046650	.004900	....	....	
18,000	90,000	.053250	.006600	....	....	
18,400	92,000	.0600	.006750	....	....	
18,800	94,000	.0700	.0100	....	....	
19,200	96,000	.1000	.0300	....	....	
19,400	97,000	.1450	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	97,000
Elastic limit per square inch of original section	do...	54,000
Elongation per inch after rupture	inch..	0.2250
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		″.95 from neck
Character of broken surface		silky, 40 per centum; granular, 60 per centum; irregular surface
Elongation of inch sections		″.28*, ″.17

[Additional specimens.]

No. 2570.

Marks, $^{32}\underset{T_4}{T}H_{18}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001150	.000150	0.	....	
8,000	40,000	.001350	.000200	0.	....	
9,000	45,000	.001500	.000150	....	....	
9,200	46,000	.001550	.000050	....	....	
9,400	47,000	.001600	.000050	....	....	Elastic limit.
9,600	48,000	.012250	.010650	....	....	
9,800	49,000	.012750	.000500	....	....	
10,000	50,000	.013550	.000800	....	....	
10,200	51,000	.014350	.000800	....	....	
10,400	52,000	.015250	.000900	....	....	
10,600	53,000	.016150	.000900	....	....	
10,800	54,000	.017100	.000950	....	....	
11,000	55,000	.017850	.000750	....	....	
11,200	56,000	.018900	.001050	....	....	
11,400	57,000	.019800	.000900	....	....	
11,600	58,000	.020850	.001050	....	....	
11,800	59,000	.022000	.001150	....	....	
12,000	60,000	.023050	.001050	....	....	
12,400	62,000	.025600	.002350	....	....	
12,800	64,000	.028000	.002400	....	....	
13,200	66,000	.031050	.003050	....	....	
13,600	68,000	.034000	.002950	....	....	
14,000	70,000	.037600	.003600	....	....	
14,400	72,000	.041500	.003900	....	....	
14,800	74,000	.045750	.004250	....	....	
15,200	76,000	.050000	.004250	....	....	
15,600	78,000	.0550	.0050	....	....	
16,000	80,000	.0600	.0050	....	....	
16,400	82,000	.0750	.0150	....	....	
16,800	84,000	.0850	.0100	....	....	
17,200	86,000	.0950	.0100	....	....	
17,600	88,000	.1350	.0400	....	....	
17,760	88,800	.1800	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 88,800
Elastic limit per square inch of original section.. do... 47,000
Elongation per inch after rupture...inch.. 0.2300
Elongation per inch under strain at elastic limit ....do .. .001600
Reduction in diameter at point of rupture ....do... .095
Reduction in area after rupture, per centum of original section 34
Position of rupture .... ″.45 from neck
Character of broken surface..............................granular; dull silky spot at the circumference
Elongation of inch sections..″.15, ″.31*

No. 2571.

Marks, $^{32}\frac{\mathrm{T\,H}_{18}}{\mathrm{T}_5}$
Diameter, ″.505.
Sectional area, .20 inch square.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000350	.000150	0.	....	
4, 000	20, 000	.000500	.000150	0.	....	
5, 000	25, 000	.000750	.000250	0.	....	
6, 000	30, 000	.000900	.000150	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001250	.000200	0.	....	
9, 000	45, 000	.001400	.000150	....	....	Elastic limit.
9, 200	46, 000	.011900	.010500	....	....	
9, 400	47, 000	.012900	.001000	....	....	
9, 600	48, 000	.013750	.000850	....	....	
9, 800	49, 000	014550	.000800	....	....	
10, 000	50, 000	015600	.001050	....	....	
10, 200	51, 000	.016500	.000900	....	....	
10, 400	52, 000	.017500	.001000	....	....	
10, 600	53, 000	.018500	.001000	....	....	
10, 800	54, 000	.019500	.001000	....	....	
11, 000	55, 000	.020600	.001100	....	....	
11, 200	56, 000	.021150	.000550	....	....	
11, 400	57, 000	.022500	.001350	....	....	
11, 600	58, 000	.024350	.001850	....	....	
11, 800	59, 000	.025600	.001250	....	....	
12, 000	60, 000	.026800	.001200	....	....	
12, 400	62, 000	.029700	.002900	....	....	
12, 800	64, 000	.033150	.003400	....	....	
13, 200	66, 000	.036600	.003450	....	....	
13, 600	68, 000	.041000	.004400	....	....	
14, 000	70, 000	.047000	.006000	....	....	
14, 400	72, 000	.052500	.005500	....	....	
14, 800	74, 000	.0600	.0075	....	....	
15, 200	76, 000	.0650	.0050	....	....	
15, 600	78, 000	.0800	.0150	....	....	
16, 000	80, 000	.0950	.0150	....	....	
16, 400	82, 000	.1150	.0200	....	....	
16, 700	83, 500	.1850	.0700	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	83, 500
Elastic limit per square inch of original section	do...	45, 000
Elongation per inch after rupture	inch..	0. 3050
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.185
Reduction in area after rupture, per centum of original section		59. 8
Position of rupture		1 inch from neck
Character of broken surface		fine, silky; cup-shaped end
Elongation of inch sections		″.18, ″.43*

[Additional specimens.]

No. 2570.

Marks, $^{32}\frac{\text{T}}{\text{T}_4}\text{H}_{18}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001150	.000150	0.	....	
8,000	40,000	.001350	.000200	0.	....	
9,000	45,000	.001500	.000150	....	....	
9,200	46,000	.001550	.000050	....	....	
9,400	47,000	.001600	.000050	....	....	Elastic limit.
9,600	48,000	.012250	.010650	....	....	
9,800	49,000	.012750	.000500	....	....	
10,000	50,000	.013550	.000800	....	....	
10,200	51,000	.014350	.000800	....	....	
10,400	52,000	.015250	.000900	....	....	
10,600	53,000	.016150	.000900	....	....	
10,800	54,000	.017100	.000950	....	....	
11,000	55,000	.017850	.000750	....	....	
11,200	56,000	.018900	.001050	....	....	
11,400	57,000	.019800	.000900	....	....	
11,600	58,000	.020850	.001050	....	....	
11,800	59,000	.022000	.001150	....	....	
12,000	60,000	.023050	.001050	....	....	
12,400	62,000	.025600	.002550	....	....	
12,800	64,000	.028000	.002400	....	....	
13,200	66,000	.031050	.003050	....	....	
13,600	68,000	.034000	.002950	....	....	
14,000	70,000	.037600	.003600	....	....	
14,400	72,000	.041500	.003900	....	....	
14,800	74,000	.045750	.004250	....	....	
15,200	76,000	.050000	.004250	....	....	
15,600	78,000	.0550	.0050	....	....	
16,000	80,000	.0600	.0050	....	....	
16,400	82,000	.0750	.0150	....	....	
16,800	84,000	.0850	.0100	....	....	
17,200	86,000	.0950	.0100	....	....	
17,600	88,000	.1350	.0400	....	....	
17,760	88,800	.1800	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	88,800
Elastic limit per square inch of original section	do...	47,000
Elongation per inch after rupture	inch..	0.2300
Elongation per inch under strain at elastic limit	do ..	.001600
Reduction in diameter at point of rupture	do...	.095
Reduction in area after rupture, per centum of original section		34
Position of rupture		″.45 from neck
Character of broken surface		granular; dull silky spot at the circumference
Elongation of inch sections		″.15, ″.31*

No. 2571.

Marks, ${}^{32}\frac{\text{T H}_{18}}{\text{T}_{6}}$
Diameter, ″.505.
Sectional area, .20 inch square.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.		
2, 000	10, 000	.000200	.000100	0.		
3, 000	15, 000	.000350	.000150	0.		
4, 000	20, 000	.000500	.000150	0.		
5, 000	25, 000	.000750	.000250	0.		
6, 000	30, 000	.000900	.000150	0.		
7, 000	35, 000	.001050	.000150	0.		
8, 000	40, 000	.001250	.000200	0.		
9, 000	45, 000	.001400	.000150			Elastic limit.
9, 200	46, 000	.011900	.010500			
9, 400	47, 000	.012900	.001000			
9, 600	48, 000	.013750	.000850			
9, 800	49, 000	014550	.000800			
10, 000	50, 000	015600	.001050			
10, 200	51, 000	.016500	.000900			
10, 400	52, 000	.017500	.001000			
10, 600	53, 000	.018500	.001000			
10, 800	54, 000	.019500	.001000			
11, 000	55, 000	.020600	.001100			
11, 200	56, 000	.021150	.000550			
11, 400	57, 000	.022500	.001350			
11, 600	58, 000	.024350	.001850			
11, 800	59, 000	.025600	.001250			
12, 000	60, 000	.026800	.001200			
12, 400	62, 000	.029700	.002900			
12, 800	64, 000	.033150	.003400			
13, 200	66, 000	.036600	.003450			
13, 600	68, 000	.041000	.004400			
14, 000	70, 000	.047000	.006000			
14, 400	72, 000	.052500	.005500			
14, 800	74, 000	.0600	.0075			
15, 200	76, 000	.0650	.0050			
15, 600	78, 000	.0800	.0150			
16, 000	80, 000	.0950	.0150			
16, 400	82, 000	.1150	.0200			
16, 700	83, 500	.1850	.0700			Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	83, 500
Elastic limit per square inch of original section ....do...	45, 000
Elongation per inch after rupture........inch..	0. 3050
Elongation per inch under strain at elastic limit ....do...	.001400
Reduction in diameter at point of rupture ....do...	.185
Reduction in area after rupture, per centum of original section........	59. 8
Position of rupture	1 inch from neck
Character of broken surface........	fine, silky; cup-shaped end
Elongation of inch sections	″.18, ″.43*

No. 2572.

Marks, $^{32}\underset{T_{6}}{T}\,H_{18}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.		
2, 000	10, 000	.000250	.000150	0.		
3, 000	15, 000	.000400	.000150	0.		
4, 000	20, 000	.000550	.000150	0.		
5, 000	25, 000	.000700	.000150	0.		
6, 000	30, 000	.000850	.000150	0.		
7, 000	35, 000	.001050	.000200	0.		
8, 000	40, 000	.001200	.000150	0.		
8, 200	41, 000	.001250	.000050			
8, 400	42, 000	.001300	.000050			
8, 600	43, 000	.001300	0.			
8, 800	44, 000	.001400	.000100			Elastic limit.
9, 000	45, 000	.010600	.009200			
9, 200	46, 000	.011500	.000900			
9, 400	47, 000	.012150	.000650			
9, 600	48, 000	.013150	.001000			
9, 800	49, 000	.014000	.000850			
10, 000	50, 000	.015000	.001000			
10, 400	52, 000	.016750	.001750			
10, 800	54, 000	.018850	.002100			
11, 200	56, 000	.020850	.002000			
11, 600	58, 000	.023250	.002400			
12, 000	60, 000	.025750	.002500			
12, 400	62, 000	.028750	.003000			
12, 800	64, 000	.032150	.003400			
13, 200	66, 000	.035250	.003100			
13, 600	68, 000	.040000	.004750			
14, 000	70, 000	.045000	.005000			
14, 400	72, 000	.050250	.005250			
14, 800	74, 000	.0550	.004750			
15, 200	76, 000	.0600	.0050			
15, 600	78, 000	.0750	.0150			
16, 000	80, 000	.0900	.0150			
16, 400	82, 000	.1050	.0150			
16, 800	84, 000	.1550	.0500			
16, 840	84, 200	.1800	.0250			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	84, 200
Elastic limit per square inch of original section	do...	44, 000
Elongation per inch after rupture	inch..	0. 3100
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.185
Reduction in area after rupture, per centum of original section		59. 8
Position of rupture		at middle of stem
Character of broken surface		silky; cup-shaped end
Elongation of inch sections		″.27*, ″.35*

NEW TRUNNION HOOP NO. 18.

No. 2609.

Marks, ^{32} T H ^{18} T,
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000400	.000200	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000650	.000100	0.	....	
6,000	30,000	.000750	.000100	0.	....	
7,000	35,000	.000950	.000200	0.	....	
8,000	40,000	.001100	.000150	0.	....	
9,000	45,000	.001300	.000200	....	....	
9,600	48,000	.001450	.000150	....	....	
9,800	49,000	.001500	.000050	....	....	
10,000	50,000	.001550	.000050	....	....	Elastic limit.
10,200	51,000	.001750	.000200	....	....	
10,400	52,000	.003400	.001650	....	....	
10,600	53,000	.004900	.001500	....	....	
10,800	54,000	.006000	.001100	....	....	
11,000	55,000	.006750	.000750	....	....	
11,200	56,000	.007750	.001000	....	....	
11,600	58,000	.009000	.001250	....	....	
12,000	60,000	.011500	.002500	....	....	
12,400	62,000	.013750	.002250	....	....	
12,800	64,000	.015500	.001750	....	....	
13,200	66,000	.017500	.002000	....	....	
13,600	68,000	.020000	.002500	....	....	
14,000	70,000	.022250	.002250	....	....	
14,400	72,000	.024650	.002400	....	....	
14,800	74,000	.027000	.002350	....	....	
15,200	76,000	.029750	.002750	....	....	
15,600	78,000	.033500	.003750	....	....	
16,000	80,000	.035650	.002150	....	....	
16,400	82,000	.039500	.003850	....	....	
16,800	84,000	.044500	.005000	....	....	
17,200	86,000	.049250	.004750	....	....	
17,600	88,000	.0550	.005750	....	....	
18,000	90,000	.0600	.0050	....	....	
18,400	92,000	.0800	.0200	....	....	
18,800	94,000	.1000	.0200	....	....	
19,010	95,050	.1350	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	95,050
Elastic limit per square inch of original section ....do...	50,000
Elongation per inch after rupture ....inch..	0.2000
Elongation per inch under strain at elastic limit ....do...	.001550
Reduction in diameter at point of rupture ....do...	.105
Reduction in area after rupture, per centum of original section	87.1
Position of rupture	1″.10 from neck
Character of broken surface	granular, 60 per centum; silky, 40 per centum
Elongation of inch sections	″.13, ″.27*

No. 2610.

Marks, $^{32}\underset{T_8}{T}\,H_{18}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.		
2, 000	10, 000	.000300	.000150	0.		
3, 000	15, 000	.000450	.000150	0.		
4, 000	20, 000	.000600	.000150	0.		
5, 000	25, 000	.000700	.000100	0.		
6, 000	30, 000	.000850	.000150	0.		
7, 000	35, 000	.001000	.000150	0.		
8, 000	40, 000	.001200	.000200	0.		
9, 000	45, 000	.001400	.000200			
9, 200	46, 000	.001450	.000050			
9, 400	47, 000	.001500	.000050			
9, 600	48, 000	.001550	.000050			
9, 800	49, 000	.001500	0.			
10, 000	50, 000	.001600	.000050			
10, 200	51, 000	.001650	.000050			Elastic limit.
10, 400	52, 000	.002000	.000350			
10, 600	53, 000	.004250	.002250			
10, 800	54, 000	.005600	.001350			
11, 000	55, 000	.006500	.000900			
11, 200	56, 000	.007050	.000550			
11, 400	57, 000	.008000	.000950			
11, 600	58, 000	.008850	.000850			
11, 800	59, 000	.009850	.001000			
12, 000	60, 000	.010750	.000900			
12, 400	62, 000	.012800	.002050			
12, 800	64, 000	.014800	.002000			
13, 200	66, 000	.017000	.002200			
13, 600	68, 000	.019000	.002000			
14, 000	70, 000	.021100	.002100			
14, 400	72, 000	.023500	.002400			
14, 800	74, 000	.026050	.002550			
15, 200	76, 000	.029000	.002950			
15, 600	78, 000	.032900	.003900			
16, 000	80, 000	.037750	.004850			
16, 400	82, 000	.040000	.002250			
16, 800	84, 000	.044000	.004000			
17, 200	86, 000	.0500	.0060			
17, 600	88, 000	.0550	.0050			
18, 000	90, 000	.0650	.0100			
18, 400	92, 000	.0850	.0200			
18, 800	94, 000	.1050	.0200			
18, 980	94, 900	.1550	.0500			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	94, 900
Elastic limit per square inch of original section	do	51, 000
Elongation per inch after rupture	inch	0. 1950
Elongation per inch under strain at elastic limit	do	.001650
Reduction in diameter at point of rupture	do	.085
Reduction in area after rupture, per centum of original section		30. 7
Position of rupture		at middle of stem
Character of broken surface		granular, 75 per centum; silky, 25 per centum
Elongation of inch sections		″.17*, ″.22*

No. 2611.

Marks, $^{32}\underset{T_{9}}{T}H_{18}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001100	.000200	0.	....	
8,000	40,000	.001300	.000200	0.	....	
9,000	45,000	.001500	.000200	....	....	
9,200	46,000	.001550	.000050	....	....	
9,400	47,000	.001650	.000100	....	....	
9,600	48,000	.001700	.000050	....	....	
9,800	49,000	.001700	0.	....	....	Elastic limit.
10,000	50,000	.001950	.000250	....	....	
10,200	51,000	.004200	.002250	....	....	
10,400	52,000	.005300	.001300	....	....	
10,600	53,000	.006200	.000900	....	....	
10,800	54,000	.007000	.000800	....	....	
11,200	56,000	.009050	.002050	....	....	
11,600	58,000	.011000	.001950	....	....	
12,000	60,000	.012500	.001500	....	....	
12,400	62,000	.014550	.002050	....	....	
12,800	64,000	.016500	.001950	....	....	
13,200	66,000	.018400	.001900	....	....	
13,600	68,000	.020650	.002250	....	....	
14,000	70,000	.023000	.002350	....	....	
14,400	72,000	.025150	.002150	....	....	
14,800	74,000	.028000	.002850	....	....	
15,200	76,000	.030850	.002850	....	....	
15,600	78,000	.034150	.003300	....	....	
16,000	80,000	.037650	.003500	....	....	
16,400	82,000	.041500	.003850	....	....	
16,800	84,000	.047500	.006000	....	....	
17,200	86,000	.052500	.005000	....	....	
17,600	88,000	.057500	.005000	....	....	
18,000	90,000	.0700	.0125	....	....	
18,400	92,000	.0900	.0200	....	....	
18,800	94,000	.1050	.0150	....	....	
18,940	94,700	.1400	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	94,700
Elastic limit, per square inch of original section	do...	49,000
Elongation per inch after rupture	inch..	0.1950
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		1″.10 from the neck
Character of broken surface		granular, 60 per centum; silky, 40 per centum
Elongation of inch sections		″.20*, ″.19

No. 2587.

Marks, 32 $^{\mathrm{T\,H_1}}_{\mathrm{T_1}}$

Diameter, ".505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	....	....	
2, 000	10, 000	.000300	.000150	....	....	
3, 000	15, 000	.000450	.000150	....	....	
4, 000	20, 000	.000650	.000200	....	....	
5, 000	25, 000	.000750	.000100	....	....	
6, 000	30, 000	.000900	.000150	....	....	
7, 000	35, 000	.001050	.000150	....	....	
8, 000	40, 000	.001250	.000200	....	....	
9, 000	45, 000	.001400	.000150	....	....	
10, 000	50, 000	.001550	.000150	....	....	
10, 200	51, 000	.001600	.000050	....	....	
10, 400	52, 000	.001650	.000050	....	....	
10, 600	53, 000	.001700	.000050	....	....	
10, 800	54, 000	.001750	.000050	....	....	
11, 000	55, 000	.001800	.000050	....	....	Elastic limit.
11, 200	56, 000	.006750	.004950	....	....	
11, 400	57, 000	.007250	.000500	....	....	
11, 600	58, 000	.007750	.000500	....	....	
11, 800	59, 000	.008400	.000650	....	....	
12, 000	60, 000	.008950	.000550	....	....	
12, 400	62, 000	.010250	.081300	....	....	
12, 800	64, 000	.011650	.001400	....	....	
13, 200	66, 000	.013100	.001450	....	....	
18, 600	68, 000	.014750	.001650	....	....	
14, 000	70, 000	.016400	.001650	....	....	
14, 400	72, 000	.018350	.001950	....	....	
14, 800	74, 000	.019750	.001400	....	....	
15, 200	76, 000	.021400	.001650	....	....	
15, 600	78, 000	.023250	.001850	....	....	
16, 000	80, 000	.025100	.001850	....	....	
16, 400	82, 000	.027250	.002150	....	....	
16, 800	84, 000	.029900	.002650	....	....	
17, 200	86, 000	.032500	.002600	....	....	
17, 600	88, 000	.035500	.003000	....	....	
18, 000	90, 000	.038500	.003000	....	....	
18, 400	92, 000	.042500	.004000	....	....	
18, 800	94, 000	.046500	.004000	....	....	
19, 200	96, 000	.0500	.0035	....	....	
19, 600	98, 000	.0550	.0050	....	....	
20, 000	100, 000	.0600	.0050	....	....	
20, 400	102, 000	.0800	.0200	....	....	
20, 800	104, 000	.0950	.0150	....	....	
21, 070	105, 350	.1150	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	105, 350
Elastic limit per square inch of original section	do...	55, 000
Elongation per inch after rupture	inch..	0. 1400
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.045
Reduction in area after rupture, per centum of original section		16. 9
Position of rupture		".85 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		".17*, ".11

No. 2588.

Marks, $^{32}\mathrm{T}^{\mathrm{H}_{19}}_{\mathrm{T}_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000300	.000200	0.	....	
3, 000	15, 000	.000400	.000100	0.	....	
4, 000	20, 000	.000550	.000150	0.	....	
5, 000	25, 000	.000700	.000150	0.	....	
6, 000	30, 000	.000900	.000200	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001200	.000150	....	....	
9, 000	45, 000	.001350	.000150	....	....	
10, 000	50, 000	.001550	.000200	....	....	
10, 200	51, 000	.001650	.000100	....	....	
10, 400	52, 000	.001700	.000050	....	....	
10, 600	53, 000	.001700	0.	....	....	
10, 800	54, 000	.001750	.000050	....	....	
11, 000	55, 000	.001800	.000050	....	....	
11, 200	56, 000	.001850	.000050	....	....	Elastic limit.
11, 400	57, 000	.003750	.001900	....	....	
11, 600	58, 000	.006750	.003000	....	....	
11, 800	59, 000	.007250	.000500	....	....	
12, 000	60, 000	.008250	.001000	....	....	
12, 400	62, 000	.009300	.001050	....	....	
12, 800	64, 000	.011000	.001700	....	....	
13, 200	66, 000	.012050	.001050	....	....	
13, 600	68, 000	.013500	.001450	....	....	
14, 000	70, 000	.015230	.001750	....	....	
14, 400	72, 000	.017000	.001750	....	....	
14, 800	74, 000	.018450	.001450	....	....	
15, 200	76, 000	.020250	.001800	....	....	
15, 600	78, 000	.022150	.001200	....	....	
16, 000	80, 000	.024500	.002350	....	....	
16, 400	82, 000	.026000	.001500	....	....	
16, 800	84, 000	.028000	.002000	....	....	
17, 200	86, 000	.030350	.002350	....	....	
17, 600	88, 000	.033500	.003150	....	....	
18, 000	90, 000	.036750	.003250	....	....	
18, 400	92, 000	.040000	.003250	....	....	
18, 800	94, 000	.043500	.003500	....	....	
19, 200	96, 000	.0475	.0040	....	....	
19, 600	98, 000	.0525	.0050	....	....	
20, 000	100, 000	.0550	.0025	....	....	
20, 400	102, 000	.0600	.0050	....	....	
20, 800	104, 000	.0800	.0200	....	....	
21, 200	106, 000	.1000	.0200	....	....	
21, 280	106, 400	.1350	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section .... pounds.. 106, 400
Elastic limit per square inch of original section .... do... 55, 000
Elongation per inch after rupture.. inch.. 0. 1850
Elongation under strain at elastic limit.. do... .001850
Reduction in diameter at point of rupture... do... .065
Reduction in area after rupture, per centum of original section 23. 9
Position of rupture ....1″.10 from neck
Character of broken surface, granular ; dull spot at circumference; opened cracks in surface of stem
Elongation of inch sections...″.17*, ″.20

No. 2589.

Marks, $^{32}\underset{T_2}{T}H_{19}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000650	.000200	0.	....	
5, 000	25, 000	.000850	.000200	0.	....	
6, 000	30, 000	.001000	.000150	0.	....	
7, 000	35, 000	.001150	.000150	0.	....	
8, 000	40, 000	.001350	.000200	0.	....	
9, 000	45, 000	.001500	.000150	....	....	
10, 000	50, 000	.001650	.000150	....	....	
10, 200	51, 000	.001700	.000050	....	....	
10, 400	52, 000	.001750	.000050	....	....	
10, 600	53, 000	.001800	.000050	....	....	
10, 800	54, 000	.001850	.000050	....	....	Elastic limit.
11, 000	55, 000	.002350	.000500	....	....	
11, 200	56, 000	.007350	.005000	....	....	
11, 400	57, 000	.008250	.000900	....	....	
11, 600	58, 000	.008750	.000500	....	....	
11, 800	59, 000	.009350	.000600	....	....	
12, 000	60, 000	.009850	.000500	....	....	
12, 400	62, 000	.011200	.001350	....	....	
12, 800	64, 000	.012450	.001250	....	....	
13, 200	66, 000	.014250	.001800	....	....	
13, 600	68, 000	.016000	.001750	....	....	
14, 000	70, 000	.017500	.001500	....	....	
14, 400	72, 000	.019050	.001550	....	....	
14, 800	74, 000	.021050	.002000	....	....	
15, 200	76, 000	.022900	.001850	....	....	
15, 600	78, 000	.025250	.002350	....	....	
16, 000	80, 000	.027500	.002250	....	....	
16, 400	82, 000	.030500	.003000	....	....	
16, 800	84, 000	.032750	.002250	....	....	
17, 200	86, 000	.035750	.003000	....	....	
17, 600	88, 000	.039300	.003550	....	....	
18, 000	90, 000	.042900	.003600	....	....	
18, 400	92, 000	.046750	.003850	....	....	
18, 800	94, 000	.0550	.008250	....	....	
19, 200	96, 000	.0600	.0050	....	....	
19, 600	98, 000	.0650	.0050	....	....	
20, 000	100, 000	.0750	.0100	....	....	
20, 400	102, 000	.0950	.0200	....	....	
20, 720	103, 600	.1400	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	103, 600
Elastic limit per square inch of original section	do...	54, 000
Elongation per inch after rupture	inch..	0. 1750
Elongation per inch under strain at elastic limit	do...	.001850
Reduction in diameter at point of rupture	do...	.045
Reduction in area after rupture, per centum of original section		16. 9
Position of rupture		1″.05 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.15, ″.20*

No. 2513.

Marks, $^{32}\frac{T}{T_1}{}^{H_{30}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000500	.000200	0.	....	
4, 000	20, 000	.000700	.000200	0.	....	
5, 000	25, 000	.000800	.000100	0.	....	
6, 000	30, 000	.001000	.000200	0.	....	
7, 000	35, 000	.001150	.000150	0.	....	
8, 000	40, 000	.001300	.000150	0.	....	
9, 000	45, 000	.001500	.000200	....	....	
10, 000	50, 000	.001650	.000150	....	....	
10, 200	51, 000	.001750	.000100	....	....	Elastic limit.
10, 400	52, 000	.002250	.000500	....	....	
10, 600	53, 000	.003200	.000950	....	....	
10, 800	54, 000	.004000	.000800	....	....	
11, 000	55, 000	.004800	.000800	....	....	
11, 200	56, 000	.006000	.001200	....	....	
11, 400	57, 000	.007000	.001000	....	....	
11, 600	58, 000	.007750	.000750	....	....	
11, 800	59, 000	.008250	.000500	....	....	
12, 000	60, 000	.008750	.000500	....	....	
12, 400	62, 000	.010500	.001750	....	....	
12, 800	64, 000	.012250	.001750	....	....	
13, 200	66, 000	.014000	.001750	....	....	
13, 600	68, 000	.015600	.001600	....	....	
14, 000	70, 000	.017500	.001900	....	....	
14, 400	72, 000	.020000	.002500	....	....	
14, 800	74, 000	.021750	.001750	....	....	
15, 200	76, 000	.023400	.001650	....	....	
15, 600	78, 000	.026000	.002600	....	....	
16, 000	80, 000	.028750	.002750	....	....	
16, 400	82, 000	.031750	.003000	....	....	
16, 800	84, 000	.034750	.003000	....	....	
17, 200	86, 000	.038000	.003250	....	....	
17. 600	88, 000	.043250	.005250	....	....	
18, 000	90, 000	.0500	.006750	....	....	
18, 400	92, 000	.0550	.0050	....	....	
18, 800	94, 000	.0600	.0050	....	....	
19, 200	96, 000	.0750	.0150	....	....	
19, 600	98, 000	.1000	.0250	....	....	
19, 680	98, 400	.1200	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98, 400
Elastic limit per square inch of original section	do...	51, 000
Elongation per inch after rupture	inch..	0. 1850
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.085
Reduction in area after rupture, per centum of original section		30. 7
Position of rupture		″.55 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.25*, ″.12

No. 2514.

Marks, $^{32}\frac{T\,H_{30}}{T_{2}}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000500	.000200	0.	....	
4, 000	20, 000	.000600	.000100	0.	....	
5, 000	25, 000	.000850	.000250	0.	....	
6, 000	30, 000	.001000	.000150	0.	....	
7, 000	35, 000	.001150	.000150	0.	....	
8, 000	40, 000	.001350	.000200	0.	....	
9, 000	45, 000	.001450	.000100	....	....	
10, 000	50, 000	.001650	.000200	....	....	
10, 200	51, 000	.001700	.000050	....	....	Elastic limit.
10, 400	52, 000	.001950	.000250	....	....	
10, 600	53, 000	.002300	.000350	....	....	
10, 800	54, 000	.003100	.000800	....	....	
11, 000	55, 000	.003900	.000800	....	....	
11, 200	56, 000	.005000	.001100	....	....	
11, 400	57, 000	.005800	.000800	....	....	
11, 600	58, 000	.006700	.000900	....	....	
11, 800	59, 000	.007350	.000650	....	....	
12, 000	60, 000	.008100	.000750	....	....	
12, 400	62, 000	.010000	.001900	....	....	
12, 800	64, 000	.011500	.001500	....	....	
13, 200	66, 000	.013200	.001700	....	....	
13, 600	68, 000	.014800	.001600	....	....	
14, 000	70, 000	.016500	.001700	....	....	
14, 400	72, 000	.018500	.002000	....	....	
14, 800	74, 000	.020300	.001800	....	....	
15, 200	76, 000	.022250	.001950	....	....	
15, 600	78, 000	.024500	.002250	....	....	
16, 000	80, 000	.027000	.002500	....	....	
16, 400	82, 000	.029850	.002850	....	....	
16, 800	84, 000	.032550	.002700	....	....	
17, 200	86, 000	.036250	.003700	....	....	
17, 600	88, 000	.041000	.004750	....	....	
18, 000	90, 000	.0450	.0040	....	....	
18, 400	92, 000	.0500	.0050	....	....	
19, 780	98, 900	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	98, 900
Elastic limit per square inch of original section..........do...	51, 000
Elongation per inch after rupture..........inch..	0. 0500
Elongation per inch under strain at elastic limit..........do...	.001700
Reduction in diameter at point of rupture..........do...	.015
Reduction in area after rupture, per centum of original section..........	5. 7
Position of rupture..........	".90 from neck
Character of broken surface..........	granular
Elongation of inch sections..........	".06*, ".04

No. 2515.

Marks, $^{32}\underset{T_3}{T}H_{30}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000150	0.	....	
2,000	10,000	.000250	.000100	0.	....	
3,000	15,000	.000500	.000250	0.	....	
4,000	20,000	.000600	.000100	0.	....	
5,000	25,000	.000700	.000100	0.	....	
6,000	30,000	.000950	.000250	0.	....	
7,000	35,000	.001050	.000100	0.	....	
8,000	40,000	.001200	.000150	0.	....	
9,000	45,000	.001450	.000150	....	....	
10,000	50,000	.001550	.000100	....	....	
10,200	51,000	.001600	.000050	....	....	Elastic limit.
10,400	52,000	.001900	.000300	....	....	
10,600	53,000	.002550	.000650	....	....	
10,800	54,000	.003600	.001050	....	....	
11,000	55,000	.004350	.000750	....	....	
11,200	56,000	.005350	.001000	....	....	
11,400	57,000	.006250	.000900	....	....	
11,600	58,000	.007250	.001000	....	....	
11,800	59,000	.008250	.001000	....	....	
12,000	60,000	.009500	.001250	....	....	
12,400	62,000	.011000	.001500	....	....	
12,800	64,000	.012100	.001100	....	....	
13,200	66,000	.013900	.001800	....	....	
13,600	68,000	.015700	.001800	....	....	
14,000	70,000	.017550	.001850	....	....	
14,400	72,000	.019750	.002200	....	....	
14,800	74,000	.022000	.002250	....	....	
15,200	76,000	.023900	.001900	....	....	
15,600	78,000	.027000	.003100	....	....	
16,000	80,000	.030000	.003000	....	....	
16,400	82,000	.033000	.003000	....	....	
16,800	84,000	.036500	.003500	....	....	
17,200	86,000	.041000	.004500	....	....	
17,600	88,000	.0500	.0090	....	....	
18,000	90,000	.0550	.0050	....	....	
18,400	92,000	.0600	.0050	....	....	
18,800	94,000	.0750	.0150	....	....	
19,200	96,000	.0950	.0200	....	....	
19,300	96,500	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	96,500
Elastic limit per square inch of original section....................do...	51,000
Elongation per inch after rupture....................inch..	0.1150
Elongation per inch under strain at elastic limit....................do...	.001600
Reduction in diameter at point of rupture....................do...	.025
Reduction in area after rupture, per centum of original section	9.5
Position of rupture....................	″.35 from neck
Character of broken surface	granular
Elongation of inch sections....................	″.12*, ″.11

[Additional specimens.]

No. 2573.

Marks, $^{32}\genfrac{}{}{0pt}{}{\mathrm{T\ H_{30}}}{\mathrm{T_4}}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.060200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000500	.000150	0.	....	
5,000	25,000	.000700	.000200	0.	....	
6,000	30,000	.000900	.000200	0.	....	
7,000	35,000	.001050	.000150	0.	....	
8,000	40,000	.001200	.000150	....	....	
9,000	45,000	.001350	.000150	....	....	
9,200	46,000	.001400	.000050	....	....	
9,400	47,000	.001450	.000050	....	....	
9,600	48,000	.001500	.000050	....	....	Elastic limit.
9,800	49,000	.002250	.000750	....	....	
10,000	50,000	.003300	.000050	....	....	
10,200	51,000	.004150	.000850	....	....	
10,400	52,000	.005150	.001000	....	....	
10,600	53,000	.006350	.001200	....	....	
10,800	54,000	.007350	.001000	....	....	
11,000	55,000	.008100	.000750	....	....	
11,200	56,000	.008900	.000800	....	....	
11,400	57,000	.009700	.000800	....	....	
11,600	58,000	.010500	.000800	....	....	
11,800	59,000	.011350	.000850	....	....	
12,000	60,000	.012350	.001000	....	....	
12,400	62,000	.014150	.001800	....	....	
12,800	64,000	.016300	.002150	....	....	
13,200	66,000	.018200	.001900	....	....	
13,600	68,000	.020250	.002050	....	....	
14,000	70,000	.022550	.002300	....	....	
14,400	72,000	.025000	.002450	....	....	
14,800	74,000	.027500	.002500	....	....	
15,200	76,000	.030250	.003750	....	....	
15,600	78,000	.033550	.003300	....	....	
16,000	80,000	.037250	.003750	....	....	
16,400	82,000	.041550	.004300	....	....	
16,800	84,000	.047000	.005450	....	....	
17,200	86,000	.052500	.005500	....	....	
17,600	88,000	.0600	.0075	....	....	
18,000	90,000	.0700	.0100	....	....	
18,400	92,000	.0950	.0250	....	....	
18,800	94,000	.1450	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	94,000
Elastic limit per square inch of original section..........do...	48,000
Elongation per inch after rupture..........inch..	0.2350
Elongation per inch under strain at elastic limit..........do...	.001500
Reduction in diameter at point of rupture..........do...	.115
Reduction in area after rupture, per centum of original section..........	40.3
Position of rupture..........	".70 from neck
Character of broken surface..........	silky; interspersed with fine granulation
Elongation of inch sections..........	".33*, ".14

No. 2574.

Marks, $^{32}\underset{T_5}{T\,H_{26}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000300	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000700	.000200	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001000	.000200	0.	....	
8,000	40,000	.001200	.000150	0.	....	
9,000	45,000	.001350	.000150	....	....	
9,200	46,000	.001400	.000050	....	....	
9,400	47,000	.001500	.000100	....	....	
9,600	48,000	.001600	.000100	....	....	Elastic limit.
9,800	49,000	.002100	.000500	....	....	
10,000	50,000	.002700	.000600	....	....	
10,200	51,000	.005000	.002300	....	....	
10,400	52,000	.005750	.000750	....	....	
10,600	53,000	.006950	.001200	....	....	
10,800	54,000	.007450	.000500	....	....	
11,000	55,000	.008200	.000750	....	....	
11,200	56,000	.009150	.000950	....	....	
11,400	57,000	.009900	.000750	....	....	
11,600	58,000	.010600	.000700	....	....	
11,800	59,000	.011400	.000800	....	....	
12,000	60,000	.012150	.000750	....	....	
12,400	62,000	.014350	.002200	....	....	
12,800	64,000	.016100	.001750	....	....	
13,200	66,000	.018000	.001900	....	....	
13,600	68,000	.020050	.002050	....	....	
14,000	70,000	.022550	.002500	....	....	
14,400	72,000	.025050	.002500	....	....	
14,800	74,000	.027450	.002100	....	....	
15,200	76,000	.029600	.002150	....	....	
15,600	78,000	.033350	.003750	....	....	
16,000	80,000	.037000	.003650	....	....	
16,400	82,000	.041000	.004000	....	....	
16,800	84,000	.047500	.006500	....	....	
17,200	86,000	.053500	.006000	....	....	
17,600	88,000	.0600	.0065	....	....	
18,000	90,000	.0700	.0100	....	....	
18,400	92,000	.0900	.0200	....	....	
18,800	94,000	.1250	.0350	....	....	
18,810	94,050	.1450	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section............pounds..	94,050
Elastic limit per square inch of original section............do...	48,000
Elongation per inch after rupture............inch..	0.2350
Elongation per inch under strain at elastic limit............do...	.001600
Reduction in diameter at point of rupture............do...	.115
Reduction in area after rupture, per centum of original section............	40.8
Position of rupture............	¾ inch from neck
Character of broken surface............	silky; interspersed with fine granulation
Elongation of inch sections............	″.32*, .″15

No. 2575.

Marks, $^{32}\underset{\text{T}_6}{\text{T}}\,\text{H}_{20}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.		
2,000	10,000	.000200	.000100	0.		
3,000	15,000	.000350	.000150	0.		
4,000	20,000	.000450	.000100	0.		
5,000	25,000	.000600	.000150	0.		
6,000	30,000	.000800	.000200	0.		
7,000	35,000	.601000	.000200	0.		
8,000	40,000	.001150	.000150	0.		
9,000	45,000	.001300	.000150			
9,200	46,000	.001350	.000050			Elastic limit.
9,400	47,000	.007900	.006550			
9,000	48,000	.008700	.000800			
9,800	49,000	.009200.	.000500			
10,000	50,000	.009900	.000700			
10,200	51,000	.010750	.000850			
10,400	52,000	.011400	.600650			
10,600	53,000	.012150	.000750			
10,800	54,000	.013150	.001000			
11,000	55,000	.014050	.000900			
11,200	56,000	.014850	.000800			
11,400	57,000	.015900	.001050			
11,600	58,000	.016550	.000650			
11,800	59,000	.017450	.000900			
12,000	60,000	.018450	.001000			
12,400	62,000	.020600	.002150			
12,800	64,000	.022750	.002150			
13,200	66,000	.024850	.002100			
13,600	68,060	.028000	.003150			
14,000	70,000	.031250	.003250			
14,400	72,000	.035500	.004250			
14,800	74,000	.038000	.002500			
15,200	76,000	.042000	.004000			
15,600	78,000	.046500	.004500			
16,000	80,000	.052000	.005500			
16,400	82,000	.0600	.0080			
16,800	84,000	.0650	.0050			
17,200	86,000	.0800	.0150			
17,600	88,000	.0950	.0150			
18,000	90,000	.1200	.0250			
18,100	90,500	.1700	.0500			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	90,500
Elastic limit per square inch of original section	do	46,000
Elongation per inch after rupture	inch	0.2600
Elongation per inch under strain at elastic limit	do	.001350
Reduction in diameter at point of rupture	do	.145
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		″.80 from neck
Character of broken surface		fine, silky
Elongation of inch sections		″.36*, ″.16

No. 2389.

Marks, $^{32}\frac{\mathrm{T\,H}_{31}}{\mathrm{T}_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000450	.000200	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000900	.000150	0.	....	
7, 000	35, 000	.001100	.000200	....	....	
8, 000	40, 000	.001300	.000200	....	....	
9, 000	45, 000	.001500	.000200	....	....	
9, 600	48, 000	.001650	.000150	....	....	
9, 800	49, 000	.001700	.000050	....	....	Elastic limit.
10, 000	50, 000	.003250	.001550	....	....	
10, 200	51, 000	.004950	.001700	....	....	
10, 400	52, 000	.008000	.003050	....	....	
10, 600	53, 000	.009250	.001250	....	....	
10, 800	54, 000	.009750	.000500	....	....	
11, 000	55, 000	.010250	.000500	....	....	
11, 200	56, 000	.010900	.000650	....	....	
11, 400	57, 000	.011900	.001000	....	....	
11, 600	58, 000	.012700	.000800	....	....	
11, 800	59, 000	.013750	.001050	....	....	
12, 000	60, 000	.014750	.001000	....	....	
12, 400	62, 000	.016750	.002000	....	....	
12, 800	64, 000	.019350	.002600	....	....	
13, 200	66, 000	.021300	.001950	....	....	
13, 600	68, 000	.023600	.002300	....	....	
14, 000	70, 000	.026100	.002500	....	....	
14, 400	72, 000	.029250	.003150	....	....	
14, 800	74, 000	.032300	.003050	....	....	
15, 200	76, 000	.035500	.003200	....	....	
15, 600	78, 000	.040000	.004500	....	....	
16, 000	80, 000	.044750	.004750	....	....	
16, 400	82, 000	.050250	.005500	....	....	
16, 800	84, 000	.0555	.004750	....	....	
17, 200	86, 000	.0600	.0050	....	....	
17, 550	87, 750	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	87, 750
Elastic limit per square inch of original section	do...	49, 000
Elongation per inch after rupture	inch..	0. 0800
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	.025
Reduction in area after rupture, per centum of original section		9. 5
Position of rupture		″.40 from neck
Character of broken surface		granular; opened cracks in surface of stem
Elongation of inch sections		″.10*, ″.06

No. 2390.

Marks, $^{32}\underset{\mathrm{T}_2}{\mathrm{T}}\,\mathrm{H}_{3}$,
Diameter, ″.505.
Sectional area .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000900	.000250	0.	....	
6,000	30,000	.001100	.000200	0.	....	
7,000	35,000	.001250	.000150	....	....	
8,000	40,000	.001450	.000200	....	....	
9,000	45,000	.001550	.000100	....	....	
9,200	46,000	.001600	.000050	....	....	
9,400	47,000	.001650	.000050	....	....	
9,600	48,000	.001700	.000050	....	....	Elastic limit.
9,800	49,000	.002000	.000300	....	....	
10,000	50,000	.012000	.010000	....	....	
10,200	51,000	.012900	.000900	....	....	
10,400	52,000	.013550	.000650	....	....	
10,600	53,000	.014500	.000950	....	....	
10,800	54,000	.015300	.000800	....	....	
11,000	55,000	.016050	.000750	....	....	
11,200	56,000	.017000	.000950	....	....	
11,400	57,000	.018050	.001050	....	....	
11,600	58,000	.019050	.001000	....	....	
11,800	59,000	.020000	.000950	....	....	
12,000	60,000	.021050	.001050	....	....	
12,400	62,000	.023500	.002450	....	....	
12,800	64,000	.026050	.002450	....	....	
13,200	66,000	.029000	.002950	....	....	
13,600	68,000	.032250	.003250	....	....	
14,000	70,000	.035300	.003050	....	....	
14,400	72,000	.039000	.003700	....	....	
14,800	74,000	.043750	.004750	....	....	
15,200	76,000	.048500	.004750	....	....	
15,600	78,000	.0550	.0065	....	....	
16,000	80,000	.0600	.0050	....	....	
16,400	82,000	.0750	.0150	....	....	
16,800	84,000	.0850	.0100	....	....	
17,200	86,000	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	86,000
Elastic limit per square inch of original section	do...	48,000
Elongation per inch after rupture	inch..	0.1000
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	.025
Reduction in area after rupture, per centum of original section		9.5
Position of rupture		″.47 from neck

Character of broken surface, granular; radiating from a dull spot at circumference; opened cracks in surface of stem.

Elongation of inch sections	″.11*, ″.09

No. 2391.

Marks, $^{32}\frac{T}{T_2}H_{31}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000450	.000200	0.	....	
4, 000	20, 000	.000650	.000200	0.	....	
5, 000	25, 000	.000800	.000150	0.	....	
6, 000	30, 000	.001000	.000200	0.	....	
7, 000	35, 000	.001200	.000200	....	....	
8, 000	40, 000	.001350	.000150	....	....	
9, 000	45, 000	.001550	.000200	....	....	
9, 200	46, 000	.001600	.000050	....	....	
9, 400	47, 000	.001600	0.	....	....	
9, 600	48, 000	.001650	.000050	....	....	
9, 800	49, 000	.001700	.000050	....	....	Elastic limit.
10, 000	50, 000	.008250	.006550	....	....	
10, 200	51, 000	.010150	.001900	....	....	
10, 400	52, 000	.010750	.000600	....	....	
10, 600	53, 000	.011250	.000500	....	....	
10, 800	54, 000	.011700	.000450	....	....	
11, 000	55, 000	.012650	.000959	....	....	
11, 200	56, 000	.014000	.001350	....	....	
11, 400	57, 000	.015000	.001000	....	....	
11, 600	58, 000	.015750	.000750	....	....	
11, 800	59, 000	.016550	.000800	....	....	
12, 000	60, 000	.017500	.000950	....	....	
12, 400	62, 000	.019500	.002000	....	....	
12, 800	64, 000	.021500	.002000	....	....	
13, 200	66, 000	.023750	.002250	....	....	
13, 600	68, 000	.026150	.002400	....	....	
14, 000	70, 000	.029100	.002950	....	....	
14, 400	72, 000	.032250	.003150	....	....	
14, 800	74, 000	.035750	.003500	....	....	
15, 200	76, 000	.040000	.004250	....	....	
15, 600	78, 000	.045000	.005000	....	....	
16, 000	80, 000	.050000	.005000	....	....	
16, 400	82, 000	.0550	.0050	....	....	
16, 800	84, 000	.0600	.0050	....	....	
17, 200	86, 000	.0800	.0200	....	....	
17, 600	88, 000	.0950	.0150	....	....	
17, 990	89, 950	.1350	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	89, 950
Elastic limit per square inch of original section	do...	49, 000
Elongation per inch after rupture	inch..	0. 2000
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	1. 05
Reduction in area after rupture, per centum of original section		37. 1
Position of rupture		".80 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		".29*, ".11

[Additional specimens.]

No. 2438.

Marks, $^{32}\genfrac{}{}{0pt}{}{\text{T}}{\text{T}_4}\text{H}_{21}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000900	.000150	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001350	.000300	0.	....	
9, 000	45, 000	.001550	.000200	....	....	
9, 200	46, 000	.001550	0.	....	....	
9, 400	47, 000	.001600	.000050	....	....	
9, 600	48, 000	.001650	.000050	....	....	Elastic limit.
9, 800	49, 000	.002000	.000350	....	....	
10, 000	50, 000	.013750	.011750	....	....	
10, 200	51, 000	.014750	.001000	....	....	
10, 400	52, 000	.015750	.001000	....	....	
10, 600	53, 000	.016400	.000650	....	....	
10, 800	54, 000	.017250	.000850	....	....	
11, 000	55, 000	.018000	.000750	....	....	
11, 200	56, 000	.019100	.001100	....	....	
11, 400	57, 000	.020100	.001000	....	....	
11, 600	58, 000	.021100	.001000	....	....	
11, 800	59, 000	.022150	.001050	....	....	
12, 000	60, 000	.023500	.001350	....	....	
12, 400	62, 000	.025600	.002100	....	....	
12, 800	64, 000	.028050	.002450	....	....	
13, 200	66, 000	.030600	.002550	....	....	
13, 600	68, 000	.034050	.003450	....	....	
14, 000	70, 000	.038000	.003950	....	....	
14, 400	72, 000	.041250	.003250	....	....	
14, 800	74, 000	.045600	.004350	....	....	
15, 200	76, 000	.0550	.0094	....	....	
15, 600	78, 000	.0600	.0050	....	....	
16, 000	80, 000	.0650	.0050	....	....	
16, 400	82, 000	.0750	.0100	....	....	
16, 800	84, 000	.0900	.0150	....	....	
17, 200	86, 000	.1050	.0150	....	....	
17, 600	88, 000	.1550	.0500	....	....	
17, 630	88, 150	.1850	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	88, 150
Elastic limit per square inch of original section	do...	48, 000
Elongation per inch after rupture	inch..	0, 2800
Elongation per inch under strain at elastic limit	do...	.001650
Reduction in diameter at point of rupture	do...	.155
Reduction in area after rupture, per centum of original section		51. 9
Position of rupture		".65 from neck
Character of broken surface		fine, silky; cup-shaped end
Elongation of inch sections		".17, ".39*

No. 2439.

Marks, $^{32}\frac{\mathrm{TH}_3}{\mathrm{T}_1}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0	....	
3, 000	15, 000	.000350	.000150	0	....	
4, 000	20, 000	.000600	.000250	0	....	
5, 000	25, 000	.000800	.000200	0.	....	
6, 000	30, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001150	.000200	....	....	
8, 000	40, 000	.001350	.000200	....	....	
9, 000	45, 000	.001500	.000150	....	....	
9, 200	46, 000	.001500	0.	....	....	
9, 400	47, 000	.001550	.000050	....	....	
9, 600	48, 000	.001600	.000050	....	....	
9, 800	49, 000	.001650	.000050	....	....	
10, 000	50, 000	.001650	0.	....	....	
10, 200	51, 000	.001700	.000050	....	....	**Elastic limit.**
10, 400	52, 000	.005000	.003300	....	....	
10, 600	53, 000	.014800	.009800	....	....	
10, 800	54, 000	.016000	.001200	....	....	
11, 000	55, 000	.016900	.000900	....	....	
11, 200	56, 000	.017500	.000600	....	....	
11, 400	57, 000	.018400	.000900	....	....	
11, 600	58, 000	.019250	.000850	....	....	
11, 800	59, 000	.020400	.001150	....	....	
12, 000	60, 000	.021200	.000800	....	....	
12, 400	62, 000	.023200	.002000	....	....	
12, 800	64, 000	.025150	.001950	....	....	
13, 200	66, 000	.027700	.002550	....	....	
13, 600	68, 000	.030650	.002950	....	....	
14, 000	70, 000	.033750	.003100	....	....	
14, 400	72, 000	.037100	.003350	....	....	
14, 800	74, 000	.041000	.003900	....	....	
15, 200	76, 000	.046000	.005000	....	....	
15, 600	78, 000	.049750	.003750	....	....	
16, 000	80, 000	.055150	.005400	....	....	
16, 400	82, 000	.0600	.004850	....	....	
16, 800	84, 000	.0700	.0100	....	....	
17, 200	86, 000	.0850	.0150	....	....	
17, 600	88, 000	.1000	.0150	....	....	
18, 000	90, 000	.1300	.0300	....	....	
18, 140	90, 700	.1550	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	90, 700
Elastic limit per square inch of original section	do	51, 000
Elongation per inch after rupture	inch	0. 2500
Elongation per inch under strain at elastic limit	do	.001700
Reduction in diameter at point of rupture	do	.145
Reduction in area after rupture, per centum of original section		49. 1
Position of rupture		".55 from neck
Character of broken surface		fine, silky
Elongation of inch sections		".36*, ".14

No. 2440.

Marks, $^{32}\,\underset{\mathrm{T_6}}{\mathrm{T}}\,\mathrm{H_{31}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000500	.000250	0.	....	
4, 000	20, 000	.000650	.000150	0.	....	
5, 000	25, 000	.000800	.000150	0.	....	
6, 000	30, 000	.001000	.000200	0.	....	
7, 000	35, 000	.001150	.000150	0.	....	
8, 000	40, 000	.001350	.000200	....	....	
9, 000	45, 000	.001500	.000150	....	....	
9, 200	46, 000	.001550	.000050	....	....	
9, 400	47, 000	.001550	0.	....	....	
9, 600	48, 000	.001600	.000050	....	....	
9, 800	49, 000	.001650	.000050	....	....	
10, 000	50, 000	.001650	0.	....	....	Elastic limit.
10, 200	51, 000	.014250	.012600	....	....	
10, 400	52, 000	.015250	.001000	....	....	
10, 600	53, 000	.015750	.000500	....	....	
10, 800	54, 000	.016600	.000850	....	....	
11, 000	55, 000	.017500	.000900	....	....	
11, 200	66, 000	.018500	.001000	....	....	
11, 400	57, 000	.019500	.001000	....	....	
11, 600	58, 000	.020500	.001000	....	....	
11, 800	59, 000	.021400	.000900	....	....	
12, 000	60, 000	.022750	.001350	....	....	
12, 400	62, 000	.025150	.002400	....	....	
12, 800	64, 000	.027500	.002350	....	....	
13, 200	66, 000	.030750	.003250	....	....	
13, 600	68, 000	.034000	.003250	....	....	
14, 000	70, 000	.037500	.003500	....	....	
14, 400	72, 000	.041250	.003750	....	....	
14, 800	74, 000	.046500	.005250	....	....	
15, 200	76, 000	.051500	.005000	....	....	
15, 600	78, 000	.0550	.0035	....	....	
16, 000	80, 000	.0650	.0100	....	....	
16, 400	82, 000	.0800	.0150	....	....	
16, 800	84, 000	.0900	.0100	....	....	
17, 200	86, 000	.1050	.0150	....	....	
17, 600	88, 000	.1550	.0500	....	....	
17, 610	88, 050	.1700	.0150	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	88, 050
Elastic limit per square inch of original section	do...	50, 000
Elongation per inch after rupture	inch..	0. 2900
Elongation per inch under strain at elastic limit	do...	.001650
Reduction in diameter at point of rupture	do...	.155
Reduction in area after rupture, per centum of original section		51. 9
Position of rupture		at middle of stem
Character of broken surface		fine, silky
Elongation of inch sections		″.28*, ″.30*

No. 2516.

Marks, $^{32\ \mathrm{THs}}_{\quad \mathrm{T}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000650	.000250	0.	....	
5,000	25,000	.000750	.000100	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001050	.000150	0.	....	
8,000	40,000	.001250	.000200	0.	....	
9,000	45,000	.001450	.000200	....	....	
10,000	50,000	.001650	.000200	....	....	
10,200	51,000	.001700	.000050	....	....	
10,400	52,000	.001800	.000100	....	....	Elastic limit.
10,600	53,000	.003900	.002100	....	....	
10,800	54,000	.004800	.000900	....	....	
11,000	55,000	.005750	.000950	....	....	
11,200	56,000	.006750	.001000	....	....	
11,400	57,000	.007500	.000750	....	....	
11,600	58,000	.008200	.000700	....	....	
11,800	59,000	.009000	.000800	....	....	
12,000	60,000	.009650	.000650	....	....	
12,400	62,000	.011350	.001700	....	....	
12,800	64,000	.012900	.001550	....	....	
13,200	66,000	.014600	.001700	....	....	
13,600	68,000	.016000	.001400	....	....	
14,000	70,000	.018250	.002250	....	....	
14,400	72,000	.020250	.002000	....	....	
14,800	74,000	.022250	.002000	....	....	
15,200	76,000	.025000	.002750	....	....	
15,600	78,000	.027250	.002250	....	....	
16,000	80,000	.030000	.002750	....	....	
16,400	82,000	.033250	.003250	....	....	
16,800	84,000	.037000	.003750	....	....	
17,200	86,000	.041750	.004750	....	....	
17,600	88,000	.0450	.003250	....	....	
18,000	90,000	.0550	.0100	....	....	
18,400	92,000	.0600	.0050	....	....	
18,800	94,000	.0650	.0050	....	....	
19,200	96,000	.0850	.0200	....	....	
19,600	98,000	.1200	.0350	....	....	
19,620	98,100	.1400	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	98,100
Elastic limit per square inch of original section	do	52,000
Elongation per inch after rupture	inch	0.2000
Elongation per inch under strain at elastic limit	do	.001800
Reduction in diameter at point of rupture	do	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		1″.05 from neck
Character of broken surface		granular; dull, eccentric spot
Elongation of inch sections		″.24*, ″.16

No. 2517.

Marks, $^{32}\frac{\text{T H}_{22}}{\text{T}_3}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000350	.000250	0.	....	
3,000	15,000	.000550	.000200	0.	....	
4,000	20,000	.000650	.000100	0.	....	
5,000	25,000	.000900	.000250	0.	....	
6,000	30,000	.001100	.000200	0.	....	
7,000	35,000	.001250	.000150	0.	....	
8,000	40,000	.001450	.000200	0.	....	
9,000	45,000	.001600	.000150	....	....	
10,000	50,000	.001700	.000100	....	....	
10,200	51,000	.001750	.000050	....	....	Elastic limit.
10,400	52,000	.002050	.000300	....	....	
10,600	53,000	.003050	.001000	....	....	
10,800	54,000	.004650	.001600	....	....	
11,000	55,000	.005600	.000950	....	....	
11,200	56,000	.006300	.000700	....	....	
11,400	57,000	.007250	.000950	....	....	
11,600	58,000	.008250	.001000	....	....	
11,800	59,000	.009000	.000750	....	....	
12,000	60,000	.009900	.000900	....	....	
12,400	62,000	.011500	.001600	....	....	
12,800	64,000	.013500	.002000	....	....	
13,200	66,000	.015250	.001750	....	....	
13,600	68,000	.017000	.001750	....	....	
14,000	70,000	.019000	.002000	....	....	
14,400	72,000	.021750	.002750	....	....	
14,800	74,000	.024500	.002750	....	....	
15,200	76,000	.027500	.003000	....	....	
15,600	78,000	.030000	.002500	....	....	
16,000	80,000	.032500	.002500	....	....	
16,400	82,000	.036000	.003500	....	....	
16,800	84,000	.038750	.002750	....	....	
17,200	86,000	.043250	.004500	....	....	
17,600	88,000	.0500	.006750	....	....	
18,000	90,000	.0550	.0050	....	....	
18,400	92,000	.0650	.0100	....	....	
18,800	94,000	.0850	.0200	....	....	
19,200	96,000	.1050	.0200	....	....	
19,250	96,250	.1350	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96,250
Elastic limit per square inch of original section	do...	51,000
Elongation per inch after rupture	inch..	0.1500
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.045
Reduction in area after rupture, per centum of original section	...	16.9
Position of rupture		1 inch from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.16′, ″.14

No. 2518.

Marks, $^{32}\frac{\text{T H}_2}{\text{T}_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permenent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000350	.000100	0.	....	
4, 000	20, 000	.000550	.000200	0.	....	
5, 000	25, 000	.000700	.000150	0.	....	
6, 000	30, 000	.000900	.000200	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001200	.000150	0.	....	
9, 000	45, 000	.001400	.000200	....	....	
10, 000	50, 000	.001550	.000150	....	....	
10, 200	51, 000	.001650	.000100	....	....	Elastic limit.
10, 400	52, 000	.002250	.000600	....	....	
10, 600	53, 000	.003250	.001000	....	....	
10, 800	54, 000	.004350	.001100	....	....	
11, 000	55, 000	.005250	.000900	....	....	
11, 200	56, 000	.006250	.001000	....	....	
11, 400	57, 000	.007150	.000900	....	....	
11, 600	58, 000	.008000	.000850	....	....	
11, 800	59, 000	.008750	.000750	....	....	
12, 000	60, 000	.009500	.000750	....	....	
12, 400	62, 000	.011250	.001750	....	....	
12, 800	64, 000	.013050	.001800	....	....	
13, 200	66, 000	.014750	.001700	....	....	
13, 600	68, 000	.016800	.002050	....	....	
14, 000	70, 000	.019000	.002200	....	....	
14, 400	72, 000	.021000	.002000	....	....	
14, 800	74, 000	.023250	.002250	....	....	
15, 200	76, 000	.025850	.002600	....	....	
15, 600	78, 000	.028550	.002700	....	....	
16, 000	80, 000	.032000	.003450	....	....	
16, 400	82, 000	.035400	.003400	....	....	
16, 800	84, 000	.039500	.004100	....	....	
17, 200	86, 000	.043750	.004250	....	....	
17, 600	88, 000	.0500	.006250	....	....	
18, 000	90, 000	.0550	.0050	....	....	
18, 400	92, 000	.0650	.0100	....	....	
18, 800	94, 000	.0850	.0200	....	....	
19, 200	96, 000	.1050	.0200	....	....	
19, 260	96, 300	.1350	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	96, 300
Elastic limit per square inch of original section	do	51, 000
Elongation per inch after rupture	inch	0. 2000
Elongation per inch under strain at elastic limit	do	.001650
Reduction in diameter at point of rupture	do	.105
Reduction in area after rupture, per centum of original section		37. 1
Position of rupture		¾ inch from neck
Character of broken surface		granular, 60 per centum; silky, 40 per centum
Elongation of inch sections		″.16, ″.24*

No. 2475.

Marks, $^{82}\underset{T_1}{T}\,H_3$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000500	.000150	0.	....	
5,000	25,000	.000650	.000150	0.	....	
6,000	30,000	.000800	.000150	0.	....	
7,000	35,000	.001000	.000200	....	....	
8,000	40,000	.001150	.000150	....	....	
9,000	45,000	.001300	.000150	....	....	
10,000	50,000	.001500	.000200	....	....	
10,200	51,000	.001550	.000050	....	....	
10,400	52,000	.001550	0.	....	....	Elastic limit.
10,600	53,000	.002250	.000700	....	....	
10,800	54,000	.003250	.001000	....	....	
11,000	55,000	.005000	.001750	....	....	
11,200	56,000	.006000	.001000	....	....	
11,400	57,000	.007250	.001250	....	....	
11,600	58,000	.008000	.000750	....	....	
11,800	59,000	.008750	.000750	....	....	
12,000	60,000	.009500	.000750	....	....	
12,400	62,000	.011050	.001550	....	....	
12,800	64,000	.013050	.002000	....	....	
13,200	66,000	.014900	.001850	....	....	
13,600	68,000	.017500	.002600	....	....	
14,000	70,000	.019500	.002000	....	....	
14,400	72,000	.022000	.002500	....	....	
14,800	74,000	.024000	.002000	....	....	
15,200	76,000	.026000	.002000	....	....	
15,600	78,000	.029250	.003250	....	....	
16,000	80,000	.032350	.003100	....	....	
16,400	82,000	.035600	.003250	....	....	
16,800	84,000	.039500	.003900	....	....	
17,200	86,000	.044550	.005050	....	....	
17,600	88,000	.050000	.005450	....	....	
18,000	90,000	.0600	.0100	....	....	
18,400	92,000	.0700	.0100	....	....	
18,800	94,000	.0850	.0150	....	....	
19,180	95,900	.1250	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	95,900
Elastic limit per square inch of original section	do...	52,000
Elongation per inch after rupture	inch..	0.1300
Elongation per inch under strain at elastic limit	do...	.001550
Reduction in diameter at point of rupture	do...	.045
Reduction in area after rupture, per centum of original section		16.9
Position of rupture		½ inch from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.15*, ″.11

No. 2476.

Marks, $^{32}\frac{\mathrm{T\ H_{22}}}{\mathrm{T_3}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000400	.000200	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000950	.000250	0.	....	
7,000	35,000	.001100	.000150	....	....	
8,000	40,000	.001250	.000150	....	....	
9,000	45,000	.001400	.000150	....	....	
10,000	50,000	.001550	.000150	....	....	
10,200	51,000	.001600	.000050	....	....	
10,400	52,000	.001700	.000100	....	....	Elastic limit.
10,600	53,000	.002100	.000400	....	....	
10,800	54,000	.002650	.000550	....	....	
11,000	55,000	.003300	.000650	....	....	
11,200	56,000	.005000	.001700	....	....	
11,400	57,000	.006100	.001100	....	....	
11,600	58,000	.007000	.000900	....	....	
11,800	59,000	.007800	.000800	....	....	
12,000	60,000	.008750	.000950	....	....	
12,400	62,000	.010500	.001750	....	....	
12,800	64,000	.012050	.001550	....	....	
13,200	66,000	.014000	.001950	....	....	
13,600	68,000	.016500	.002500	....	....	
14,000	70,000	.018500	.002000	....	....	
14,400	72,000	.020750	.002250	....	....	
14,800	74,000	.022650	.001900	....	....	
15,200	76,000	.025000	.002350	....	....	
15,600	78,000	.028100	.003100	....	....	
16,000	80,000	.031250	.003150	....	....	
16,400	82,000	.034500	.003250	....	....	
16,800	84,000	.038150	.003650	....	....	
17,200	86,000	.041750	.003600	....	....	
17,600	88,000	.048000	.006250	....	....	
18,000	90,000	.0550	.0070	....	....	
18,400	92,000	.0600	.0050	....	....	
18,800	94,000	.0800	.0200	....	....	
19,200	96,000	.1100 .1350	.0300 .0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96,000
Elastic limit per square inch of original section	do...	52,000
Elongation per inch after rupture	inch..	0.1600
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	.085
Reduction in area after rupture, per centum of original section		30.7
Position of rupture		⅝ inch from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.22*, ″.10

No. 2477.

Marks, $^{32}\underset{T_{3}}{T}\,H_{s}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000300	.000100	0.	....	
4,000	20,000	.000450	.000150	0.	....	
5,000	25,000	.000600	.000150	0.	....	
6,000	30,000	.000800	.000200	0.	....	
7,000	35,000	.001000	.000200	....	....	
8,000	40,000	.001150	.000150	....	....	
9,000	45,000	.001300	.000150	....	....	
10,000	50,000	.001450	.000150	....	....	
10,200	51,000	.001500	.000050	....	....	Elastic limit.
10,400	52,000	.002750	.001250	....	....	
10,600	53,000	.003750	.001000	....	....	
10,800	54,000	.004750	.001000	....	....	
11,000	55,000	.005600	.000850	....	....	
11,200	56,000	.006500	.000900	....	....	
11,400	57,000	.007400	.000900	....	....	
11,600	58,000	.008250	.000850	....	....	
11,800	59,000	.009200	.000950	....	....	
12,000	60,000	.010050	.000850	....	....	
12,400	62,000	.012100	.002050	....	....	
12,800	64,000	.014050	.001950	....	....	
13,200	66,000	.016000	.001950	....	....	
13,600	68,000	.018250	.002250	....	....	
14,000	70,000	.020000	.001750	....	....	
14,400	72,000	.022550	.002550	....	....	
14,800	74,000	.025500	.002950	....	....	
15,200	76,000	.028250	.002750	....	....	
15,600	78,000	.031250	.003000	....	....	
16,000	80,000	.034750	.003500	....	....	
16,400	82,000	.038500	.003750	....	....	
16,800	84,000	.043500	.005000	....	....	
17,200	86,000	.048750	.005250	....	....	
17,600	88,000	.0550	.006220	....	....	
18,000	90,000	.0600	.0050	....	....	
18,400	92,000	.0800	.0200	....	....	
18,740	93,700	.1250	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section........pounds..	93,700
Elastic limit per square inch of original section........do...	51,000
Elongation per inch after rupture........inch..	0.1500
Elongation per inch under strain at elastic limit........do...	.001500
Reduction in diameter at point of rupture........do ..	.075
Reduction in area after rupture, per centum of original section........	27.4
Position of rupture........	1 inch from neck
Character of broken surface, granular; dull spot at circumference; opened cracks in surface of stem	
Elongation of inch sections........	″.16*, ″.14

No. 2294.

Marks, $^{32}\overset{\mathrm{T}}{\mathrm{T}_1}{}^{\mathrm{H}_{34}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000600	.000150	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000950	.000200	0.	....	
7, 000	35, 000	.001150	.000200	0.	....	
8, 000	40, 000	.001300	.000150	0.	....	
9, 000	45, 000	.001450	.000150	0.	....	
10, 000	50, 000	.001650	.000200	0.	....	
10, 200	51, 000	.001700	.000050	....	....	
10, 400	52, 000	.001800	.000100	....	....	Elastic limit.
10, 600	53, 000	.002000	.000200	....	....	
10, 800	54, 000	.002850	.000850	....	....	
11, 000	55, 000	.004050	.001200	....	....	
11, 200	56, 000	.005050	.001000	....	....	
11, 400	57, 000	.006200	.001150	....	....	
11, 600	58, 000	.007100	.000900	....	....	
11, 800	59, 000	.008000	.000900	....	....	
12, 000	60, 000	.009000	.001000	....	....	
12, 400	62, 000	.010650	.001650	....	....	
12, 800	64, 000	.012400	.001750	....	....	
13, 200	66, 000	.014550	.002150	....	....	
13, 600	68, 000	.016500	.001950	....	....	
14, 000	70, 000	.018750	.002250	....	....	
14, 400	72, 000	.021000	.002250	....	....	
14, 800	74, 000	.023000	.002000	....	....	
15, 200	76, 000	.025750	.002750	....	....	
15, 600	78, 000	.028550	.002800	....	....	
16, 000	80, 000	.031550	.003000	....	....	
16, 400	82, 000	.036000	.004450	....	....	
16, 800	84, 000	.040000	.004000	....	....	
17, 200	86, 000	.045000	.005000	....	....	
17, 600	88, 000	.051250	.006250	....	....	
18, 000	90, 000	.0600	.008750	....	....	
18, 400	92, 000	.0700	.0100	....	....	
18, 800	94, 000	.0950	.0250	....	....	
18, 980	94, 900	.1300	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	94, 900
Elastic limit per square inch of original section	do...	52, 000
Elongation per inch after rupture	inch..	0. 2350
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.155
Reduction in area after rupture, per centum of original section		51. 9
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.34*, ″.13

No. 2295.

Marks, $^{32}\frac{T\ H_{34}}{T_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000500	.000150	0.	....	
4,000	20,000	.000700	.000200	0.	....	
5,000	25,000	.000900	.000200	0.	....	
6,000	30,000	.001100	.000200	0.	....	
7,000	35,000	.001250	.000150	0.	....	
8,000	40,000	.001400	.000150	0.	....	
9,000	45,000	.001550	.000150	0.	....	
10,000	50,000	.001700	.000150	0.	....	
10,200	51,000	.001750	.000050	....	....	Elastic limit.
10,400	52,000	.001950	.000200	....	....	
10,600	53,000	.002300	.000350	....	....	
10,800	54,000	.003100	.000800	....	....	
11,000	55,000	.004150	.001050	....	....	
11,200	56,000	.005300	.001150	....	....	
11,400	57,000	.006300	.001000	....	....	
11,600	58,000	.007300	.001000	....	....	
11,800	59,000	.007900	.001600	....	....	
12,000	60,000	.008850	.001950	....	....	
12,400	62,000	.010150	.001300	....	....	
12,800	64,000	.012050	.001900	....	....	
13,200	66,000	.014050	.002000	....	....	
13,600	68,000	.015850	.001800	....	....	
14,000	70,000	.017900	.002050	....	....	
14,400	72,000	.019900	.002000	....	....	
14,800	74,000	.021850	.001950	....	....	
15,200	76,000	.024600	.002750	....	....	
15,600	78,000	.027650	.003050	....	....	
16,000	80,000	.030650	.003000	....	....	
16,400	82,000	.034000	.003350	....	....	
16,800	84,000	.037400	.003400	....	....	
17,200	86,000	.042500	.005100	....	....	
17,600	88,000	.047500	.005000	....	....	
18,000	90,000	.053750	.006250	....	....	
18,400	92,000	.0600	.006250	....	....	
18,800	94,000	.0800	.0200	....	....	
19,180	95,900	.1150	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	95,900
Elastic limit per square inch of original section	do...	51,000
Elongation per inch after rupture	inch..	0.1400
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.045
Reduction in area after rupture, per centum of original section		16.9
Position of rupture		″.80 from neck
Character of broken surface, granular; small crack at circumference; opened cracks in surface of stem		
Elongation of inch sections		″.19*, ″.09

No. 2296.

Marks, ${}^{32}\underset{T_2}{T}H_{24}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.001000	.000250	0.	....	
7,000	35,000	.001150	.000150	0.	....	
8,000	40,000	.001300	.000150	0.	....	
9,000	45,000	.001500	.000200	0.	....	
10,000	50,000	.001700	.000200	0.	....	
10,200	51,000	.001750	.000050	....	....	
10,400	52,000	.001800	.000050	....	....	Elastic limit.
10,600	53,000	.002600	.000800	....	....	
10,800	54,000	.004000	.001400	....	....	
11,000	55,000	.005350	.001350	....	....	
11,200	56,000	.006350	.001000	....	....	
11,400	57,000	.007300	.000950	....	....	
11,600	58,000	.008100	.000800	....	....	
11,800	59,000	.009100	.001000	....	....	
12,000	60,000	.010000	.000900	....	....	
12,400	62,000	.011550	.001550	....	....	
12,800	64,000	.013500	.001950	....	....	
13,200	66,000	.015100	.001600	....	....	
13,600	68,000	.017250	.002150	....	....	
14,000	70,000	.019700	.002450	....	....	
14,400	72,000	.022250	.002550	....	....	
14,800	74,000	.024750	.002500	....	....	
15,200	76,000	.027500	.002750	....	....	
15,600	78,000	.030500	.003000	....	....	
16,000	80,000	.033000	.002500	....	....	
16,400	82,000	.0350	.0020	....	....	
16,800	84,000	.0400	.0050	....	....	
17,200	86,000	.0500	.0100	....	....	
17,600	88,000	.0550	.0050	....	....	
18,000	90,000	.0600	.0050	....	....	
18,400	92,000	.0750	.0150	....	....	
18,600	93,000	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....pounds..	93,000
Elastic limit per square inch of original section....do...	52,000
Elongation per inch after rupture....inch..	0.900
Elongation per inch under strain at elastic limit....do...	.001800
Reduction in diameter at point of rupture....do...	.025
Reduction in area after rupture, per centum of original section....	9.5
Position of rupture....	at middle of stem
Character of broken surface....	granular
Fractured at a small crack in the stem which became visible during the test.	
Elongation of inch sections....	″.09*, ″.09*

[Additional specimens.]

No. 2523.

Marks, $^{32}\frac{\mathrm{T\ H}_{34}}{\mathrm{T}_4}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000700	.000100	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001050	.000200	....	....	
8,000	40,000	.001250	.000200	....	....	
9,000	45,000	.001450	.000200	....	....	
10,000	50,000	.001650	.000200	....	....	
10,200	51,000	.001650	0.	....	....	
10,400	52,000	.001700	.000050	....	....	
10,600	53,000	.001700	0.	....	....	
10,800	54,000	.001750	.000050	....	....	
11,000	55,000	.001800	.000050	....	....	
11,200	56,000	.001800	0.	....	....	
11,400	57,000	.001850	.000050	....	....	
11,600	58,000	.001850	0.	....	....	
11,800	59,000	.001900	.000050	....	....	Elastic limit.
12,000	60,000	.003300	.001400	....	....	
12,400	62,000	.006400	.003100	....	....	
12,800	64,000	.009000	.002600	....	....	
13,200	66,000	.012500	.003500	....	....	
13,600	68,000	.013500	.001000	....	....	
14,000	70,000	.016000	.002500	....	....	
14,400	72,000	.017900	.001900	....	....	
14,800	74,000	.020500	.002600	....	....	
15,200	76,000	.022800	.002300	....	....	
15,600	78,000	.026000	.003200	....	....	
16,000	80,000	.029350	.003350	....	....	
16,400	82,000	.032500	.003150	....	....	
16,800	84,000	.036200	.003700	....	....	
17,200	86,000	.040900	.004700	....	....	
17,600	88,000	.047000	.006100	....	....	
18,000	90,000	.054500	.007500	....	....	
18,400	92,000	.0600	.0055	....	....	
18,800	94,000	.0800	.0200	....	....	
19,020	95,100	.1150	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	95,100
Elastic limit per square inch of original section	do...	59,000
Elongation per inch after rupture	inch..	0.2400
Elongation per inch under strain at elastic limit	do...	.001900
Reduction in diameter at point of rupture	do...	.025
Reduction in area after rupture, per centum of original section		9.5
Position of rupture		".65 from neck
Character of broken surface		fine, silky
Elongation of inch sections		".11, ".37*

No. 2524.

Marks, $^{32}\frac{\text{T}}{\text{T}_6}\text{H}_{24}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000400	.000200	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001050	.000200	0.	....	
8,000	40,000	.001250	.000200	0.	....	
9,000	45,000	.001500	.000250	....	....	
10,000	50,000	.001650	.000150	....	....	
10,200	51,000	.001650	0.	....	....	
10,400	52,000	.001700	.000050	....	....	
10,600	53,000	.001750	.000050	....	....	
10,800	54,000	.001850	.000100	....	....	
11,000	55,000	.001850	0.	....	....	
11,200	56,000	.001950	.000100	....	....	Elastic limit.
11,400	57,000	.006200	.004250	....	....	
11,600	58,000	.007100	.000900	....	....	
11,800	59,000	.008100	.001000	....	....	
12,000	60,000	.008600	.000700	....	....	
12,400	62,000	.010650	.002050	....	....	
12,800	64,000	.012500	.001850	....	....	
13,200	66,000	.014350	.001850	....	....	
13,600	68,000	.016300	.001950	....	....	
14,000	70,000	.018500	.002200	....	....	
14,400	72,000	.020600	.002100	....	....	
14,800	74,000	.022750	.002150	....	....	
15,200	76,000	.025400	.002650	....	....	
15,600	78,000	.028150	.002750	....	....	
16,000	80,000	.031400	.003250	....	....	
16,400	82,000	.034800	.003400	....	....	
16,800	84,000	.038750	.003950	....	....	
17,200	86,000	.043500	.004750	....	....	
17,600	88,000	.049000	.005500	....	....	
18,000	90,000	.057300	.008300	....	....	
18,400	92,000	.0650	.0077	....	....	
18,800	94,000	.0850	.0200	....	....	
19,100	95,800	.1300	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	95,800
Elastic limit per square inch of original section	do...	56,000
Elongation per inch after rupture	inch..	0.2600
Elongation per inch under strain at elastic limit	do...	.001950
Reduction in diameter at point of rupture	do...	.175
Reduction in area after rupture, per centum of original section		57.2
Position of rupture		at middle of stem
Character of broken surface		fine, silky
Elongation of inch sections		″.27′, ′.25′

No. 2525.

Marks, $^{32}\genfrac{}{}{0pt}{}{\text{T H}_{24}}{\text{T}_6}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.		
2, 000	10, 000	.000350	.000200	0.		
3, 000	15, 000	.000550	.000200	0.		
4, 000	20, 000	.000650	.000100	0.		
5, 000	25, 000	.000800	.000150	0.		
6, 000	30, 000	.000950	.000150	0.		
7, 000	35, 000	.001100	.000150	0.		
8, 000	40, 000	.001250	.000150	0.		
9, 000	45, 000	.001400	.000150			
10, 000	50, 000	.001650	.000250			
10, 200	51, 000	.001650	0.			
10, 400	52, 000	.001700	.000050			
10, 600	53, 000	.001750	.000050			
10, 800	54, 000	.001800	.000050			
11, 000	55, 000	.001800	0.			
11, 200	56, 000	.001900	.000100			Elastic limit.
11, 400	57, 000	.002650	.000750			
11, 600	58, 000	.005150	.002500			
11, 800	59, 000	.006350	.001200			
12, 000	60, 000	.007000	.000650			
12, 400	62, 000	.009350	.002350			
12, 800	64, 000	.011500	.002150			
13, 200	66, 000	.013500	.002000			
13, 600	68, 000	.015100	.002600			
14, 000	70, 000	.017500	.002400			
14, 400	72, 000	.019900	.002400			
14, 800	74, 000	.022000	.002100			
15, 200	76, 000	.024800	.002800			
15, 600	78, 000	.027900	.003100			
16, 000	80, 000	.031000	.003100			
16, 400	82, 000	.034700	.003700			
16, 800	84, 000	.038750	.004050			
17, 200	86, 000	.043500	.004750			
17, 600	88, 000	.049350	.005850			
18, 000	90, 000	.057500	.008150			
18, 400	92, 000	.0750	.0175			
18, 800	94, 000	.0900	.0150			
19, 040	95, 200	.1400	.0500			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	95, 200
Elastic limit per square inch of original section	do...	56, 000
Elongation per inch after rupture	inch..	0. 2500
Elongation per inch under strain at elastic limit	do...	.001900
Reduction in diameter at point of rupture	do...	.175
Reduction in area after rupture, per centum of original section		57. 2
Position of rupture		1 inch from neck
Character of broken surface		fine, silky
Elongation of inch sections		″.34*, ″.16

No. 2463.

Marks, $^{32}\overset{\mathrm{T}}{\mathrm{T_1}}\mathrm{H_{28}}$
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001150	.000200	....	....	
8,000	40,000	.001300	.000150	....	....	
9,000	45,000	.001450	.000150	....	....	
10,000	50,000	.001600	.000150	....	....	
10,200	51,000	.001650	.000050	....	....	
10,400	52,000	.001700	.000050	....	....	
10,600	53,000	.001750	.000050	....	....	
10,800	54,000	.001850	.000100	....	....	Elastic limit.
11,000	55,000	.002400	.000550	....	....	
11,200	56,000	.003600	.001200	....	....	
11,400	57,000	.004500	.000900	....	....	
11,600	58,000	.005250	.000750	....	....	
11,800	59,000	.006100	.000850	....	....	
12,000	60,000	.007050	.000950	....	....	
12,400	62,000	.009000	.001950	....	....	
12,800	64,000	.010600	.001600	....	....	
13,200	66,000	.012250	.001650	....	....	
13,600	68,000	.014050	.001800	....	....	
14,000	70,000	.015850	.001800	....	....	
14,400	72,000	.017950	.002100	....	....	
14,800	74,000	.020000	.002050	....	....	
15,200	76,000	.022200	.002200	....	....	
15,600	78,000	.025000	.002800	....	....	
16,000	80,000	.027300	.002300	....	....	
16,400	82,000	.030100	.002800	....	....	
16,800	84,000	.033500	.003400	....	....	
17,200	86,000	.037000	.003500	....	....	
17,600	88,000	.041050	.004050	....	....	
18,000	90,000	.046000	.004950	....	....	
18,400	92,000	.052000	.006000	....	....	
18,800	94,000	.0550	.0030	....	....	
19,200	96,000	.0650	.0100	....	....	
19,600	98,000	.0900	.0250	....	....	
19,680	98,400	.1050	.0150	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98,400
Elastic limit per square inch of original section	do. .	54,000
Elongation per inch after rupture	inch..	0.1100
Elongation per inch under strain at elastic limit	do...	.001850
Reduction in diameter at point of rupture	do...	.045
Reduction in area after rupture, per centum of original section		16.9
Position of rupture		''.70 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		''.14*, ''.08

No. 2464.

Marks, $^{32}\,\overset{\text{T H}_{25}}{\text{T}_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000600	.000200	0.	....	
5, 000	25, 000	.000800	.000200	0.	....	
6, 000	30, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001150	.000200	....	....	
8, 000	40, 000	.001350	.000200	....	....	
9, 000	45, 000	.001550	.000200	....	....	
10, 000	50, 000	.001750	.000200	....	....	
10, 200	51, 000	.001800	.000050	....	....	
10, 400	52, 000	.001900	.000100	....	....	Elastic limit.
10, 600	53, 000	.002250	.000350	....	....	
10, 800	54, 000	.003100	.000850	....	....	
11, 000	55, 000	.004350	.001250	....	....	
11, 200	56, 000	.005400	.001050	....	....	
11, 400	57, 000	.006400	.001000	....	....	
11, 600	58, 000	.007400	.001000	....	....	
11, 800	59, 000	.008100	.000700	....	....	
12, 000	60, 000	.009000	.000900	....	....	
12, 400	62, 000	.010750	.001750	....	....	
12, 800	64, 000	.012500	.001750	....	....	
13, 200	66, 000	.014350	.001850	....	....	
13, 600	68, 000	.016250	.001900	....	....	
14, 000	70, 000	.018200	.001950	....	....	
14, 400	72, 000	.020250	.002050	....	....	
14, 800	74, 000	.022500	.002250	....	....	
15, 200	76, 000	.025000	.002500	....	....	
15, 600	78, 000	.028000	.003000	....	....	
16, 000	80, 000	.031000	.003000	....	....	
16, 400	82, 000	.034500	.003500	....	....	
16, 800	84, 000	.037700	.003200	....	....	
17, 200	86, 000	.042000	.004300	....	....	
17, 600	88, 000	.046500	.004500	....	....	
18, 000	90, 000	.052500	.006000	....	....	
18, 400	92, 000	.0550	.0025	....	....	
18, 800	94, 000	.0650	.0100	....	....	
19, 200	96, 000	.0900	.0250	....	....	
19, 350	96, 750	.1350	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96, 750
Elastic limit per square inch of original section	do...	52, 000
Elongation per inch after rupture	inch..	0. 1650
Elongation per inch under strain at elastic limit	do...	.001900
Reduction in diameter at point of rupture	do...	.065
Reduction in area after rupture, per centum of original section		23. 9
Position of rupture		″.90 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.21*; ″.12

No. 2465.

Marks, $\overset{^{32}\mathrm{T\,H}_{38}}{\mathrm{T}_3}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
.200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001050	.000150	....	....	
8,000	40,000	.001200	.000150	....	....	
9,000	45,000	.001350	.000150	....	....	
10,000	50,000	.001550	.000200	....	....	
10,200	51,000	.001600	.000050	....	....	
10,400	52,000	.001650	.000050	....	....	
10,600	53,000	.001700	.000050	....	....	
10,800	54,000	.001700	0.	....	....	Elastic limit.
11,000	55,000	.003350	.001650	....	....	
11,200	56,000	.004750	.001400	....	....	
11,400	57,000	.005900	.001150	....	....	
11,600	58,000	.006550	.000650	....	....	
11,800	59,000	.007500	.000950	....	....	
12,000	60,000	.008200	.000700	....	....	
12,400	62,000	.010000	.001800	....	....	
12,800	64,000	.012000	.002000	....	....	
13,200	66,000	.013000	.001000	....	....	
13,600	68,000	.014550	.001550	....	....	
14,000	70,000	.017250	.002700	....	....	
14,400	72,000	.020000	.002750	....	....	
14,800	74,000	.022400	.002400	....	....	
15,200	76,000	.025000	.002600	....	....	
15,600	78,000	.027500	.002500	....	....	
16,000	80,000	.030350	.002850	....	....	
16,400	82,000	.034250	.003900	....	....	
16,800	84,000	.037250	.003000	....	....	
17,200	86,000	.042000	.004750	....	....	
17,600	88,000	.047500	.005500	....	....	
18,000	90,000	.053750	.006250	....	....	
18,400	92,000	.0600	.006250	....	....	
18,800	94,000	.0750	.0150	....	....	
19,200	96,000	.1050	.0300	....	....	
19,240	96,200	.1350	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	96,200
Elastic limit per square inch of original section ....do...	54,000
Elongation per inch after rupture............inch..	0.1900
Elongation per inch under strain at elastic limit ....do...	.001700
Reduction in diameter at point of rupture............do...	.105
Reduction in area after rupture, per centum of original section............	37.1
Position of rupture............	1″.10 from neck
Character of broken surface............	silky
Elongation of inch sections............	″.23*, ″.15

[Additional specimens.]

No. 2704.

Marks, $^{32}\,\frac{\mathrm{T\ H_{28}}}{\mathrm{T_4}}$
Diameter, ".506.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.		
2, 000	10, 000	.000250	.000150	0.		
3, 000	15, 000	.000400	.000150	0.		
4, 000	20, 000	.000550	.000150	0.		
5, 000	25, 000	.000700	.000150	0.		
6, 000	30, 000	.000900	.000200	0.		
7, 000	35, 000	.001100	.000200	0.		
8, 000	40, 000	.001300	.000200	0.		
9, 000	45, 000	.001450	.000150			
10, 000	50, 000	.001650	.000200			
10, 200	51, 000	.001650	0.			
10, 400	52, 000	.001700	.000050			
10, 600	53, 000	.001750	.000050			
10, 800	54, 000	.001750	0.			
11, 000	55, 000	.001800	.000050			Elastic limit.
11, 200	56, 000	.002250	.000450			
11, 400	57, 000	.004200	.001950			
11, 600	58, 000	.005400	.001200			
11, 800	59, 000	.006500	.001100			
12, 000	60, 000	.007700	.001200			
12, 400	62, 000	.009750	.002050			
12, 800	64, 000	.011500	.001750			
13, 200	66, 000	.013000	.001500			
13, 600	68, 000	.015400	.002400			
14, 000	70, 000	.017000	.001600			
14, 400	72, 000	.019250	.002250			
14, 800	74, 000	.021500	.002250			
15, 200	76, 000	.024000	.002500			
15, 600	78, 000	.027000	.003000			
16, 000	80, 000	.029500	.002500			
16, 400	82, 000	.032550	.003050			
16, 800	84, 000	.036100	.003550			
17, 200	86, 000	.040000	.003900			
17, 600	88, 000	.045000	.005000			
18, 000	90, 000	.051500	.006500			
18, 400	92, 000	.0550	.0035			
18, 800	94, 000	.0650	.0100			
19, 200	96, 000	.0850	.0200			
19, 390	96, 950	.1250	.0400			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96, 950
Elastic limit per square inch of original section	do...	55, 000
Elongation per inch after rupture	inch..	0. 2250
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.155
Reduction in area after rupture, per centum of original section		51. 9
Position of rupture		¾ inchfrom neck
Character of broken surface		silky
Elongation of inch sections		".34*, ".1¼

No. 2705.

Marks, $^{32}\,\substack{T\,H_{25}\\T_5}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000255	.000150	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000650	.000150	0.	....	
5, 000	25, 000	.000700	.000150	0.	....	
6, 000	30, 000	.000900	.000200	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001200	.000150	0.	....	
9, 000	45, 000	.001450	.000250	....	....	
10, 000	50, 000	.001600	.000150	....	....	
10, 200	51, 000	.001650	.000050	....	....	
10, 400	52, 000	.001700	.000050	....	....	
10, 600	53, 000	.001800	.000100	....	....	Elastic limit.
10, 800	54, 000	.002500	.000700	....	....	
11, 000	55, 000	.003500	.001000	....	....	
11, 200	56, 000	.004150	.000650	....	....	
11, 400	57, 000	.005350	.001200	....	....	
11, 600	58, 000	.006500	.001150	....	....	
11, 800	59, 000	.007350	.000850	....	....	
12, 000	60, 000	.008400	.001050	....	....	
12, 400	62, 000	.010000	.001600	....	....	
12, 800	64, 000	.012000	.002000	....	....	
13, 200	66, 000	.013750	.001750	....	....	
13, 600	68, 000	.015750	.002000	....	....	
14, 000	70, 000	.017750	.002000	....	....	
14, 400	72, 000	.020000	.002250	....	....	
14, 800	74, 000	.022250	.002250	....	....	
15, 200	76, 000	.025000	.002750	....	....	
15, 600	78, 000	.027250	.002250	....	....	
16, 000	80, 000	.030000	.002750	....	....	
16, 400	82, 000	.033900	.003900	....	....	
16, 800	84, 000	.037500	.003600	....	....	
17, 200	86, 000	.041250	.003750	....	....	
17, 600	88, 000	.047050	.005800	....	....	
18, 000	90, 000	.054000	.006950	....	....	
18, 400	92, 000	.0600	.0060	....	....	
18, 800	94, 000	.0650	.0050	....	....	
19, 200	96, 000	.0950	.0300	....	....	
19, 300	96, 500	.1200	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	96, 500
Elastic limit per square inch of original section	do....	53, 000
Elongation per inch after rupture	inch...	0. 1950
Elongation per inch under strain at elastic limit	do....	.001800
Reduction in diameter at point of rupture	do....	.105
Reduction in area after rupture, per centum of original section		37. 1
Position of rupture		".65 from neck
Character of broken surface		silky
Elongation of inch sections		".29*, ".10

No. 2706.

Marks, $^{32}\frac{T\,H_8}{T_4}$
Diameter, ″.506.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000800	.000100	0.	....	
7,000	35,000	.001000	.000200	0.	....	
8,000	40,000	.001150	.000150	0.	....	
9,000	45,000	.001300	.000150	....	....	
10,000	50,000	.001550	.000250	....	....	
10,200	51,000	.001600	.000050	....	....	
10,400	52,000	.001650	.000050	....	....	
10,600	53,000	.001700	.000050	....	....	
10,800	54,000	.001800	.000100	....	....	
11,000	55,000	.001900	.000100	....	....	Elastic limit.
11,200	56,000	.002550	.000650	....	....	
11,400	57,000	.003200	.000650	....	....	
11,600	58,000	.004500	.001300	....	....	
11,800	59,000	.005950	.001450	....	....	
12,000	60,000	.007000	.001050	....	....	
12,400	62,000	.008750	.001750	....	....	
12,800	64,000	.010500	.001750	....	....	
13,200	66,000	.012300	.001800	....	....	
13,600	68,000	.014000	.001700	....	....	
14,000	70,000	.016000	.002000	....	....	
14,400	72,000	.018050	.002050	....	....	
14,800	74,000	.020200	.002150	....	....	
15,200	76,000	.022500	.002300	....	....	
15,600	78,000	.025250	.002750	....	....	
16,000	80,000	.028050	.002800	....	....	
16,400	82,000	.031000	.002950	....	....	
16,800	84,000	.033750	.002750	....	....	
17,200	86,000	.037500	.003750	....	....	
17,600	88,000	.042000	.004500	....	....	
18,000	90,000	.046750	.004750	....	....	
18,400	92,000	.053500	.006750	....	....	
18,800	94,000	.0600	.0065	....	....	
19,200	96,000	.0700	.0100	....	....	
19,600	98,000	.0950	.0250	....	....	
19,650	98,250	.1200	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98,250
Elastic limit per square inch of original section	do...	55,000
Elongation per inch after rupture	inch..	0.1350
Elongation per inch under strain at elastic limit	do...	.001900
Reduction in diameter at point of rupture	do...	.086
Reduction in area after rupture, per centum of original section		30.7
Position of rupture		″.60 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.19*, ″.08

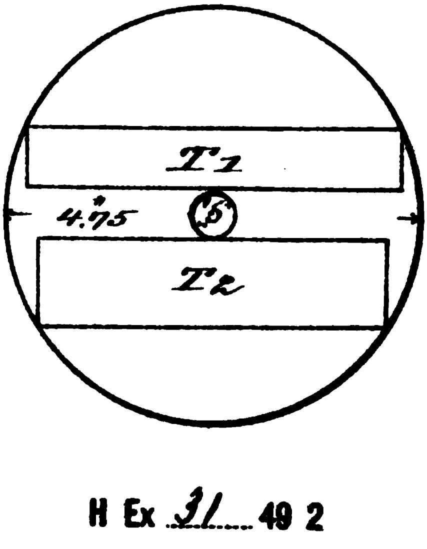
SPECIMENS FROM STEEL BREECH BLOCKS

FOR

3".2 STEEL B. L. RIFLES.

Breech Block 3.2" Rifle

General drawing showing positions from whence specimens were taken.



SPECIMENS FROM STEEL BREECH BLOCKS FOR 3″.2 STEEL B. L. RIFLES.

No. 2054.

Marks, $^{32}\underset{T_1}{B}B_1$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000050	.000050	0.	....	
2,000	10,000	.000150	.000100	0.	....	
3,000	15,000	.000350	.000200	0.	....	
4,000	20,000	.000600	.000250	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.001000	.000200	.000050	.000050	
7,000	35,000	.001150	.000150	.000050	0.	
8,000	40,000	.001300	.000150	.000050	0.	
9,000	45,000	.001450	.000150	.000050	0.	
9,200	46,000	.001500	.000050	....	....	
9,400	47,000	.001550	.000050	....	....	
9,600	48,000	.001600	.000050	....	....	
9,800	49,000	.001650	.000050	....	....	
10,000	50,000	.001750	.000100	.000050	0.	Elastic limit.
10,200	51,000	.001900	.000150	....	....	
10,400	52,000	.002200	.000300	....	....	
10,600	53,000	.002550	.000350	....	....	
10,800	54,000	.003050	.000500	....	....	
11,000	55,000	.003650	.000600	.001700	.001650	
11,200	56,000	.004150	.000500	....	....	
11,400	57,000	.004650	.000500	....	....	
11,600	58,000	.005300	.000650	....	....	
11,800	59,000	.006050	.000750	....	....	
12,000	60,000	.006900	.000850	....	....	
12,400	62,000	.008250	.001350	....	....	
12,800	64,000	.009800	.001550	....	....	
13,200	66,000	.011200	.001400	....	....	
13,600	68,000	.012700	.001500	....	....	
14,000	70,000	.014500	.001800	....	....	
14,400	72,000	.016100	.001600	....	....	
14,800	74,000	.018000	.001900	....	....	
15,200	76,000	.019900	.001900	....	....	
15,600	78,000	.021750	.001850	....	....	
16,000	80,000	.024000	.002250	....	....	
16,400	82,000	.026500	.002500	....	....	
16,800	84,000	.029000	.002500	....	....	
17,200	86,000	.031850	.002850	....	....	
17,600	88,000	.034350	.002500	....	....	
18,000	90,000	.038500	.004150	....	....	
18,400	92,000	.042050	.003550	....	....	
18,800	94,000	.047500	.005450	....	....	
19,200	96,000	.053000	.005500	....	....	
19,600	98,000	.0650	.0120	....	....	
20,000	100,000	.0750	.0100	....	....	
20,400	102,000	.0950	.0200	....	....	
20,520	102,600	.1300	.0350	....	....	Tensile strength.

General summary.

Specific gravity		7.8671
Tensile strength per square inch of original section	pounds..	102,600
Elastic limit per square inch of original section	do...	50,000
Elongation per inch after rupture	inch..	0.1550
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.074
Reduction in area after rupture, per centum of original section		27.4
Position of rupture		″.3 from neck
Character of broken surface		granular; dull center
Elongation of inch sections		″.22*, ″.09

No. 584.

Marks, $^{32}\overset{B\,B_1}{T_2}$

Length, 4''.00.

Diameter, ''.798.

Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000500	.000200	0.	....	
10,000	20,000	.000600	.000100	0.	....	
12,500	25,000	.000750	.000150	0.	....	
15,000	30,000	.001000	.000250	0.	....	
17,500	35,000	.001150	.000150	0.	....	
20,000	40,000	.001300	.000150	0.	....	
22,500	45,000	.001500	.000200	0.	....	
25,000	50,000	.001700	.000200	0.	....	
25,500	51,000	.001750	.000050	....	....	
26,000	52,000	.001750	0.	....	....	
26,500	53,000	.001750	0.	....	....	
27,000	54,000	.001800	.000050	....	....	
27,500	55,000	.001800	0.	0.	....	
28,000	56,000	.001900	.000100	....	....	
28,500	57,000	.002000	.000100	....	....	Elastic limit.
29,000	58,000	.002200	.000200	....	....	
29,500	59,000	.002500	.000300	....	....	
30,000	60,000	.003000	.000500	.001100	.001100	
30,500	61,000	.003500	.000500	....	....	
31,000	62,000	.004000	.000500	....	....	
31,500	63,000	.004500	.000500	....	....	
32,000	64,000	.005000	.000600	....	....	
32,500	65,000	.005500	.000500	.001800	.000700	
33,000	66,000	.006100	.000600	....	....	
33,500	67,000	.006500	.000400	....	....	
34,000	68,000	.007250	.000750	....	....	
34,500	69,000	.007800	.000550	....	....	
35,000	70,000	.008500	.000700	.006000	.004200	
53,100	106,200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section....................................pounds.. 57,000

Compression per inch under stress at elastic limit.......................................inch.. 0.002000

Ultimate strength per square inch of original section ....pounds.. 106,200

Manner of failure..triple flexure

No. 2044.

Marks, $^{32}\frac{\text{B B}_2}{\text{T}_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000550	.000200	0.	....	
5,000	25,000	.000700	.000150	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001050	.000200	0.	....	
8,000	40,000	.001150	.000100	0.	....	
9,000	45,000	.001350	.000200	0.	....	
9,200	46,000	.001400	.000050	....	....	
9,400	47,000	.001450	.000050	....	....	
9,600	48,000	.001500	.000050	....	....	
9,800	49,000	.001550	.000050	....	....	
10,000	50,000	.001550	0.	0.	....	
10,200	51,000	.001600	.000050	....	....	
10,400	52,000	.001700	.000100	....	....	
10,600	53,000	.001750	.000050	....	....	
10,800	54,000	.001850	.000100	....	....	Elastic limit.
11,000	55,000	.002200	.000350	.000450	.000450	
11,200	56,000	.002750	.000550	....	....	
11,400	57,000	.003100	.000350	....	....	
11,600	58,000	.003850	.000750	....	....	
11,800	59,000	.004350	.000500	....	....	
12,000	60,000	.005900	.001550	....	....	
12,400	62,000	.006750	.000850	....	....	
12,800	64,000	.008200	.001450	....	....	
13,200	66,000	.009750	.001550	....	....	
13,600	68,000	.011200	.001450	....	....	
14,000	70,000	.013100	.001900	....	....	
14,400	72,000	.014900	.001800	....	....	
14,800	74,000	.016600	.001700	....	....	
15,200	76,000	.018750	.002150	....	....	
15,600	78,000	.021000	.002250	....	....	
16,000	80,000	.023000	.002000	....	....	
16,400	82,000	.025350	.002350	....	....	
16,800	84,000	.028200	.002850	....	....	
17,200	86,000	.031000	.002800	....	....	
17,600	88,000	.033650	.002650	....	....	
18,000	90,000	.037750	.004100	....	....	
18,400	92,000	.042000	.004250	....	....	
18,800	94,000	.046850	.004850	....	....	
19,200	96,000	.053700	.006850	....	....	
19,600	98,000	.062200	.008500	....	....	
20,000	100,000	.0750	.0128	....	....	
20,400	102,000	.1050	.0300	....	....	Tensile strength.

General summary.

Specific gravity	7.8661
Tensile strength per square inch of original section ....pounds..	102,000
Elastic limit per square inch of original section ....do...	54,000
Elongation per inch after rupture ....inch..	0.1700
Elongation per inch under strain at elastic limit ....do...	.001850
Reduction in diameter at point of rupture ....do...	.095
Reduction in area after rupture, per centum of original section	34.0
Position of rupture	″.45 from neck
Character of broken surface	granular; dull center
Elongation of inch sections	″.25*, ″.09

No. 581.

Marks, $^{32}\frac{B\ B_2}{T}$,
Length, 4''.005.
Diameter, ''.797.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000050	.000050	0.	....	
5, 000	10, 000	.000250	.000200	0.	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000550	.000150	0.	....	
12, 500	25, 000	.000700	.000150	0.	....	
15, 000	30, 000	.000850	.000150	0.	....	
17, 500	35, 000	.001050	.000200	0.	....	
20, 000	40, 000	.001250	.000200	0.	....	
22, 500	45, 000	.001500	.000250	0.	....	
23, 000	46, 000	.001500	0.	....	....	
23, 500	47, 000	.001550	.000050	....	....	
24, 000	48, 000	.001600	.000050	....	....	
24, 500	49, 000	.001600	0.	....	....	
25, 000	50, 000	.001650	.000050	.000050	.000050	
25, 500	51, 000	.001650	0.	....	....	
26, 000	52, 000	.001750	.000100	....	....	
26, 500	53, 000	.001750	0.	....	....	
27, 000	54, 000	.001800	.000050	....	....	Elastic limit.
27, 500	55, 000	.002000	.000200	.000250	.000200	
28, 000	56, 000	.002250	.000250	....	....	
28, 500	57, 000	.002550	.000300	....	....	
29, 000	58, 000	.003100	.000550	....	....	
29, 500	59, 000	.003750	.000650	....	....	
30, 000	60, 000	.004500	.000750	.002500	.002250	
54, 200	108, 400	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	54, 000
Compression per inch under stress at elastic limit	inch..	0. 001800
Ultimate strength per square inch of original section	pounds..	108, 400
Manner of failure		triple flexure

No. 2055.

Marks, $\underset{\text{T}_1}{32\ \text{B}\ \text{B}_3}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	
1,000	5,000	.000100	.000100	0.	....	Initial load.
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000300	.000100	0.	....	
4,000	20,000	.000500	.000200	0.	....	
5,000	25,000	.000700	.000200	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001050	.000200	0.	....	
8,000	40,000	.001250	.000200	0.	....	
9,000	45,000	.001450	.000200	0.	....	
9,200	46,000	.001500	.000050	....	....	
9,400	47,000	.001550	.000050	....	....	
9,600	48,000	.001600	.000050	....	....	
9,800	49,000	.001600	0.	....	....	
10,000	50,000	.001650	.000050	0.	....	
10,200	51,000	.001750	.000100	....	....	Elastic limit.
10,400	52,000	.002250	.000500	....	....	
10,600	53,000	.003000	.000750	....	....	
10,800	54,000	.003650	.000650	....	....	
11,000	55,000	.004450	.000800	.002500	.002500	
11,200	56,000	.005100	.000650	....	....	
11,400	57,000	.005850	.000750	....	....	
11,600	58,000	.006400	.000550	....	....	
11,800	59,000	.007300	.000900	....	....	
12,000	60,000	.008150	.000850	....	....	
12,400	62,000	.009850	.001700	....	....	
12,800	64,000	.011200	.001350	....	....	
13,200	66,000	.013100	.001900	....	....	
13,600	68,000	.014750	.001650	....	....	
14,000	70,000	.016750	.002000	....	....	
14,400	72,000	.018600	.001850	....	....	
14,800	74,000	.020800	.002200	....	....	
15,200	76,000	.023100	.002300	....	....	
15,600	78,000	.025600	.002500	....	....	
16,000	80,000	.028500	.002900	....	....	
16,400	82,000	.031050	.002550	....	....	
16,800	84,000	.034800	.003750	....	....	
17,200	86,000	.038500	.003700	....	....	
17,600	88,500	.042850	.004350	....	....	
18,000	90,000	.048250	.005400	....	....	
18,400	92,000	.056000	.007700	....	....	
18,800	94,000	.0600	.0040	....	....	
19,200	96,000	.0750	.0150	....	....	
19,520	97,600	.1350	.0600	....	....	Tensile strength.

General summary.

Specific gravity	7,8691
Tensile strength per square inch of original section ... pounds	97,600
Elastic limit per square inch of original section ... do	51,000
Elongation per inch after rupture ... inch	0.1850
Elongation per inch under strain at elastic limit ... do	.001750
Reduction in diameter at point of rupture ... do	.075
Reduction in area after rupture, per centum of original section	27.4
Position of rupture	at middle of stem
Character of broken surface	granular; dull center
Elongation of inch sections	″.21*, ″.16

No. 585.

Marks, $^{32}\frac{\text{B B}_3}{\text{T}_3}$
Length, 4″.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000550	.000150	—.000050	—.000050	
12, 500	25, 000	.000700	.000150	—.000050	0.	
15, 000	30, 000	.000850	.000150	—.000050	0.	
17, 500	85, 000	.001000	.000150	—.000050	0.	
20, 000	40, 000	.001150	.000100	—.000050	0.	
22, 500	45, 000	.001300	.000150	—.000050	0.	
23, 000	46, 000	.001300	0.	....	....	
23, 500	47, 000	.001350	.000050	....	....	
24, 000	48, 000	.001450	.000100	....	....	
24, 500	49, 000	.001500	.000050	....	....	
25, 000	50, 000	.001500	0.	—.000050	....	
25, 500	51, 000	.001500	0.	....	....	
26, 000	52, 000	.001600	.000100	....	....	Elastic limit.
26, 500	53, 000	.001800	.000200	....	....	
27, 000	54, 000	.002100	.000300	....	....	
27, 500	55, 000	.002400	.000300	.000650	.000700	
28, 000	56, 000	.002850	.000450	....	....	
28, 500	57, 000	.003450	.000600	....	....	
29, 000	58, 000	.004000	.000550	....	....	
29, 500	59, 000	.004750	.000750	....	....	
80, 000	60, 000	.005250	.000500	.003300	.002650	
52, 300	104, 600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	52, 000
Compression per inch under stress at elastic limit	inch..	0. 001600
Ultimate strength per square inch of original section	pounds..	104, 600
Manner of failure		triple flexure

No. 2064.

Marks, $^{32}{}^{B\ B_4}_{T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	—.000050	—.000050	
2,000	10,000	.000200	.000100	—.000050	0.	
3,000	15,000	.000300	.000100	—.000050	0.	
4,000	20,000	.000400	.000100	—.000050	0.	
5,000	25,000	.000600	.000200	—.000050	0.	
6,000	30,000	.000700	.000100	—.000050	0.	
7,000	35,000	.000950	.000250	—.000050	0.	
8,000	40,000	.001100	.000150	—.000050	0.	
9,000	45,000	.001250	.000150	—.000050	0.	
9,200	46,000	.001300	.000050	....	....	
9,400	47,000	.001400	.000100	....	....	
9,600	48,000	.001450	.000050	....	....	
9,800	49,000	.001450	0.	....	....	
10,000	50,000	.001500	.000050	0.	....	
10,200	51,000	.001550	.000050	....	....	
10,400	52,000	.001600	.000050	....	....	
10,600	53,000	.001700	.000100	....	....	Elastic limit.
10,800	54,000	.002000	.000300	....	....	
11,000	55,000	.002350	.000350	....	....	
11,200	56,000	.002850	.000500	....	....	
11,400	57,000	.003450	.000600	....	....	
11,600	58,000	.004050	.000600	....	....	
11,800	59,000	.004650	.000600	....	....	
12,000	60,000	.005350	.000700	....	....	
12,400	62,000	.006800	.001450	....	....	
12,800	64,000	.008350	.001550	....	....	
13,200	66,000	.009350	.001000	....	....	
13,600	68,000	.011400	.002050	....	....	
14,000	70,000	.013150	.001750	....	....	
14,400	72,000	.014900	.001750	....	....	
14,800	74,000	.016700	.001800	....	....	
15,200	76,000	.018700	.002000	....	....	
15,600	78,000	.020700	.002000	....	....	
16,000	80,000	.023150	.002450	....	....	
16,400	82,000	.026000	.002850	....	....	
16,800	84,000	.028500	.002500	....	....	
17,200	86,000	.031550	.003050	....	....	
17,600	88,000	.034250	.002700	....	....	
18,000	90,000	.038500	.004250	....	....	
18,400	92,000	.043000	.004500	....	....	
18,800	94,000	.047900	.004900	....	....	
19,200	96,000	.055100	.007200	....	....	
19,600	98,000	.066000	.010900	....	....	
20,000	100,000	.1000	.0340	....	....	
20,060	100,300	.1050	.0050	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	100,300
Elastic limit per square inch of original section ....do...	53,000
Elongation per inch after rupture ....inch..	0.1600
Elongation per inch under strain at elastic limit ....do...	.001700
Reduction in diameter at point of rupture ....do...	.095
Reduction in area after rupture, per centum of original section	34
Position of rupture	″.2 from middle of stem
Character of broken surface	granular; dull center
Elongation of inch sections	″.20*, ″.12

No. 596.

Marks, $32\frac{BB_4}{T_3}$
Length, 4''.00
Diameter, ''.797.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0	....	
5, 000	10, 000	.000250	.000150	0	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000550	.000150	—.000050	—.000050	
12, 500	25, 000	.000700	.000150	—.000050	0.	
15, 000	30, 000	.000850	.000150	—.000050	0.	
17, 500	35, 000	.001000	.000150	—.000050	0.	
20, 000	40, 000	.001150	.000150	—.000050	0.	
22, 500	45, 000	.001300	.000150	—.000050	0.	
23, 000	46, 000	.001350	.000050	....	....	
23, 500	47, 000	.001350	0.	....	....	
24, 000	48, 000	.001400	.000050	....	....	
24, 500	49, 000	.001450	.000050	....	....	
25, 000	50, 000	.001500	.000050	—.000050	0.	
25, 500	51, 000	.001500	0.	....	....	
26, 000	52, 000	.001550	.000050	....	....	
26, 500	53, 000	.001600	.000050	....	....	Elastic limit.
27, 000	54, 000	.001800	.000200	....	....	
27, 500	55, 000	.002150	.000350	.000350	.000400	
28, 000	56, 000	.002550	.000400	....	....	
28, 500	57, 000	.003050	.000500	....	....	
29, 000	58, 000	.003550	.000500	....	....	
29, 500	59, 000	.004250	.000700	....	....	
30, 000	60, 000	.004750	.000500	.002750	.002400	
53, 600	107, 200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	53, 000
Compression per inch under stress at elastic limit	inch..	0.001600
Ultimate strength per square inch of original section	pounds..	107, 200
Manner of failure		triple flexure

No. 2056.

Marks, $\overset{32\,B\,B_1}{T_1}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000200	.000200	0.	....	
2,000	10,000	.000300	.000100	0.	....	
3,000	15,000	.000400	.000100	0.	....	
4,000	20,000	.000600	.000200	0.	....	
5,000	25,000	.000700	.000100	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001050	.000200	0.	....	
8,000	40,000	.001250	.000200	0.	....	
9,000	45,000	.001450	.000200	0.	....	
9,200	46,000	.001500	.000050	....	....	
9,400	47,000	.001550	.000050	....	....	
9,600	48,000	.001600	.000050	....	....	
9,800	49,000	.001650	.000050	....	....	
10,000	50,000	.001700	.000050	.000050	.000050	Elastic limit
10,200	51,000	.002100	.000400	....	....	
10,400	52,000	.002500	.000400	....	....	
10,600	53,000	.003100	.000600	....	....	
10,800	54,000	.003600	.000500	....	....	
11,000	55,000	.004550	.000950	....	....	
11,200	56,000	.005100	.000550	....	....	
11,400	57,000	.006100	.001000	....	....	
11,600	58,000	.006650	.000550	....	....	
11,800	59,000	.007600	.000950	....	....	
12,000	60,000	.008250	.000650	....	....	
12,400	62,000	.009500	.001250	....	....	
12,800	64,000	.011900	.002400	....	....	
13,200	66,000	.013000	.001100	....	....	
13,600	68,000	.014000	.001000	....	....	
14,000	70,000	.015750	.001750	....	....	
14,400	72,000	.018000	.002250	....	....	
14,800	74,000	.021050	.003050	....	....	
15,200	76,000	.023250	.002200	....	....	
15,600	78,000	.025500	.002250	....	....	
16,000	80,000	.028550	.003050	....	....	
16,400	82,000	.031750	.003200	....	....	
16,800	84,000	.034700	.002950	....	....	
17,200	86,000	.038500	.003800	....	....	
17,600	88,000	.042400	.003900	....	....	
18,000	90,000	.048500	.006100	....	....	
18,400	92,000	.055250	.006750	....	....	
18,800	94,000	.064000	.008750	....	....	
19,200	96,000	.0700	.0060	....	....	
19,560	97,800	.1250	.0550	....	....	Tensile strength.

General summary.

Specific gravity	7.8555
Tensile strength per square inch of original section .... pounds..	97,800
Elastic limit per square inch of original section .... do...	50,000
Elongation per inch after rupture .... inch..	0.1850
Elongation per inch under strain at elastic limit .... do...	.001700
Reduction in diameter at point of rupture .... do...	.085
Reduction in area after rupture, per centum of original section	30.7
Position of rupture	½ inch from neck
Character of broken surface	granular; dull center
Elongation of inch sections	″.24*, ″.13

No. 586.

Marks, $^{32\,B\,B_5}_{\quad T_2}$
Length, 3''.998.
Diameter, ''.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Rema
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	0.	....	—. 000100	—. 000100	
5, 000	10, 000	. 000150	. 000150	—. 000100	0.	
7, 500	15, 000	. 000300	. 000150	—. 000100	0.	
10, 000	20, 000	. 000500	. 000200	—. 000100	0.	
12, 500	25, 000	. 000650	. 000150	—. 000100	0.	
15, 000	30, 000	. 000850	. 000200	—. 000100	0.	
17, 500	35, 000	. 001000	. 000150	—. 000050	—. 000050	
20, 000	40, 000	. 001250	. 000250	—. 000050	0.	
22, 500	45, 000	. 001450	. 000200	0.	. 000050	
23, 000	46, 000	. 001500	. 000050	....	....	
23, 500	47, 000	. 001500	0.	....	....	
24, 000	48, 000	. 001550	. 000050	....	....	
24, 500	49, 000	. 001600	. 000050	....	....	
25, 000	50, 000	. 001650	. 000050	. 000100	. 000100	
25, 500	51, 000	. 001750	. 000100	....	....	
26, 000	52, 000	. 001800	. 000050	....	....	Elastic limit.
26, 500	53, 000	. 001950	. 000150	....	....	
27, 000	54, 000	. 002250	. 000300	....	....	
27, 500	55, 000	. 002650	. 000400	. 000900	. 000800	
28, 000	56, 000	. 003150	. 000500	....	....	
28, 500	57, 000	. 003650	. 000500	....	....	
29, 000	58, 000	. 004300	. 000650	....	....	
29, 500	59, 000	. 005150	. 000860	....	....	
30, 000	60, 000	. 005800	. 000650	. 003750	. 002850	
54, 100	108, 200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	52, 000
Compression per inch under stress at elastic limit	inch..	0. 001800
Ultimate strength per square inch of original section	pounds..	108, 200
Manner of failure		triple flexure

No. 2057.

Marks, $^{32\ B\ B_4}_{T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*ounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	C.	0.	0.	Initial load.
1, 000	5, 000	.000050	.000050	—.000050	—.000050	
2, 000	10, 000	.000200	.000150	—.000050	0.	
3, 000	15, 000	.000350	.000160	—.000050	0.	
4, 000	20, 000	.000550	.000200	—.000050	0.	
5, 000	25, 000	.000700	.000150	—.000050	0.	
6, 000	30, 000	.000900	.000200	—.000050	0.	
7, 000	35, 000	.001100	.000200	—.000050	0.	
8, 000	40, 000	.001300	.000200	—.000050	0.	
9, 000	45, 000	.001400	.000100	....	....	
9, 200	46, 000	.001450	.000050	....	....	
9, 400	47, 000	.001450	0.	....	....	
9, 600	48, 000	.001500	.000050	....	....	
9, 800	49, 000	.001550	.000050	....	....	
10, 000	50, 000	.001600	.000050	0.	....	
10, 200	51, 000	.001650	.000050	....	....	
10, 400	52, 000	.001700	.000050	....	....	
10, 600	53, 000	.001700	0.	....	....	
10, 800	54, 000	.001750	.000050	....	....	Elastic limit.
11, 000	55, 000	.001950	.000200	....	....	
11, 200	56, 000	.002150	.000200	....	....	
11, 400	57, 000	.002550	.000400	....	....	
11, 600	58, 000	.002850	.000300	....	....	
11, 800	59, 000	.003350	.000500	....	....	
12, 000	60, 000	.004050	.000700	....	....	
12, 400	62, 000	.005350	.001300	....	....	
12, 800	64, 000	.006600	.001250	....	....	
13, 200	66, 000	.008050	.001450	....	....	
13, 600	68, 000	.009350	.601300	....	....	
14, 000	70, 000	.010500	.001150	....	....	
14, 400	72, 000	:612100	.001600	....	....	
14, 800	74, 000	.013900	.001800	....	....	
15, 200	76, 000	.015400	.001500	....	....	
15, 600	78, 000	.017100	.001700	....	....	
16, 000	80, 000	.019000	.001900	....	....	
16, 400	82, 000	.020650	.001650	....	....	
16, 800	84, 000	.023050	.002400	....	....	
17, 200	86, 000	.025300	.002250	....	....	
17, 600	88, 000	.027550	.002250	....	....	
18, 000	90, 000	.029000	.002350	....	....	
18, 400	92, 000	.032500	.002600	....	....	
18, 800	94, 000	.035600	.003100	....	....	
19, 200	96, 000	.040000	.004400	....	....	
19, 600	98, 000	.044250	.004250	....	....	
20, 000	100, 000	.050000	.005750	....	....	
20, 400	102, 000	.056550	.006550	....	....	
20, 800	104, 000	.0650	.008450	....	....	
21, 200	106, 000	.0800	.0150	....	....	
21, 350	106, 750	.1050	.0250	....	....	Tensile strength.

General summary.

Specific gravity	7.8575
Tensile strength per square inch of original section.......pounds..	106, 750
Elastic limit per square inch of original section.......do...	54, 000
Elongation per inch after rupture.......inch..	0.1750
Elongation per inch under strain at elastic limit.......do...	.001750
Reduction in diameter at point of rupture.......do...	.085
Reduction in area after rupture, per centum of original section	30.7
Position of rupture	at middle of stem
Character of broken surface	granular; dull eccentric spot
Elongation of inch sections	″.20*, ″.15

No. 587.

Marks, $\frac{{}^{32}B\ B_{6}}{T_{2}}$
Length, 3″.996.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000050	.000050	0.	....	
5, 000	10, 000	.000150	.000100	0.	....	
7, 500	15, 000	.000300	.000150	0.	....	
10, 000	20, 000	.000450	.000150	0.	....	
12, 500	25, 000	.000600	.000150	0.	....	
15, 000	30, 000	.000750	.000150	0.	....	
17, 500	35, 000	.000900	.000150	0.	....	
20, 000	40, 000	.001050	.000150	0.	....	
22, 500	45, 000	.001250	.000200	0.	....	
25, 000	50, 000	.001400	.000150	0.	....	
25, 500	51, 000	.001400	0.	....	....	
26, 000	52, 000	.001450	.000050	....	....	
26, 500	53, 000	.001450	0.	....	....	
27, 000	54, 000	.001500	.000050	....	....	
27, 500	55, 000	.001500	0.	—.000150	—.000150	
28, 000	56, 000	.001500	0.	....	....	
28, 500	57, 000	.001500	0.	....	....	Elastic limit.
29, 000	58, 000	.001700	.000200	....	....	
29, 500	59, 000	.001800	.000100	....	....	
30, 000	60, 000	.002050	.000250	.000150	.000300	
30, 500	61, 000	.002250	.000200	....	....	
31, 000	62, 000	.002400	.000150	....	....	
31, 500	63, 000	.002600	.000200	....	....	
32, 000	64, 000	.003000	.000400	....	....	
32, 500	65, 000	.003350	.000350	.001250	.001100	
33, 000	66, 000	.003850	.000500	....	....	
33, 500	67, 000	.004400	.000550	....	....	
34, 000	68, 000	.004900	.000500	....	....	
34, 500	69, 000	.005350	.000450	....	....	
35, 000	70, 000	.005950	.000600	.003500	.002250	
56, 600	113, 200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	57, 000
Compression per inch under stress at elastic limit	inch..	0. 001500
Ultimate strength per square inch of original section	pounds..	113, 200
Manner of failure		triple flexure

No. 2075.

Marks, $^{32}\overset{\text{B B}_7}{\text{T}_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000350	.000250	0.	....	
3, 000	15, 000	.000600	.000250	0.	....	
4, 000	20, 000	.000700	.000100	0.	....	
5, 000	25, 000	.000850	.000150	0.	....	
6, 000	30, 000	.001000	.000150	0.	....	
7, 000	35, 000	.001100	.000100	0.	....	
8, 000	40, 000	.001300	.000200	0.	....	
9, 000	45, 000	.001450	.000150	0.	....	
9, 200	46, 000	.001500	.000050	....	....	
9, 400	47, 000	.001550	.000050	....	....	
9, 600	48, 000	.001550	0.	....	....	
9, 800	49, 000	.001600	.000050	....	....	
10, 000	50, 000	.001650	.000050	0.	....	Elastic limit.
10, 200	51, 000	.001850	.000200	....	....	
10, 400	52, 000	.002150	.000300	....	....	
10, 600	53, 000	.002750	.000600	....	....	
10, 800	54, 000	.003400	.000650	....	....	
11, 000	55, 000	.004250	.000850	....	....	
11, 200	56, 000	.005150	.000900	....	....	
11, 400	57, 000	.006050	.000900	....	....	
11, 600	58, 000	.006700	.000650	....	....	
11, 800	59, 000	.007600	.000900	....	....	
12, 000	60, 000	.008550	.000950	....	....	
12, 400	62, 000	.009700	.001150	....	....	
12, 800	64, 000	.011300	.001600	....	....	
13, 200	66, 000	.013400	.002100	....	....	
13, 600	68, 000	.015000	.001600	....	....	
14, 000	70, 000	.017050	.002050	....	....	
14, 400	72, 000	.019050	.002000	....	....	
14, 800	74, 000	.020950	.001900	....	....	
15, 200	76, 000	.023550	.002600	....	....	
15, 600	78, 000	.026000	.002450	....	....	
16, 000	80, 000	.029750	.003750	....	....	
16, 400	82, 000	.032500	.002750	....	....	
16, 800	84, 000	.036500	.004000	....	....	
17, 200	86, 000	.039900	.003400	....	....	
17, 600	88, 000	.044500	.004600	....	....	
18, 000	90, 000	.050750	.006250	....	....	
18, 400	92, 000	.058150	.007400	....	....	
18, 800	94, 000	.0800	.021850	....	....	
19, 200	96, 000	.1050	.0250	....	....	
19, 260	96, 300	.1250	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	96, 300
Elastic limit per square inch of original section ....do...	50, 000
Elongation per inch after rupture..............................inch..	0. 1900
Elongation per inch under strain at elastic limit..............................do...	.001650
Reduction in diameter at point of rupture..............................do...	.105
Reduction in area after rupture, per centum of original section	37. 1
Position of rupture	½ inch from middle of stem
Character of broken surface..............................	granular; dull center
Elongation of inch sections..............................	″.26*, ″.12

No. 607.

Marks, $\frac{^{32}\mathrm{BB}_7}{\mathrm{T}_2}$
Length, 4''.007.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000400	.000150	0.	....	
10,000	20,000	.000550	.000150	0.	....	
12,500	25,000	.000700	.000150	—.000050	—.000050	
15,000	30,000	.000800	.000100	—.000050	0.	
17,500	35,000	.000950	.000150	—.000100	—.000050	
20,000	40,000	.001050	.000100	—.000150	—.000050	
22,500	45,000	.001200	.000150	—.000200	—.000050	
23,000	46,000	.001250	.000050	....	....	
23,500	47,000	.001250	0.	....	....	
24,000	48,000	.001250	0.	....	....	
24,500	49,000	.001300	.000050	....	....	
25,000	50,000	.001300	0.	—.000250	—.000050	
25,500	51,000	.001300	0.	....	....	
26,000	52,000	.001350	.000050	....	....	Elastic limit.
26,500	53,000	.001750	.000400	....	....	
27,000	54,000	.002250	.000500	....	....	
27,500	55,000	.003000	.000750	.001200	.001450	
28,000	56,000	.003750	.000750	....	....	
28,500	57,000	.004500	.000750	....	....	
29,000	58,000	.005600	.001100	....	....	
29,500	59,000	.006550	.000950	....	....	
30,000	60,000	.007500	.000950	.005200	.004000	
52,700	105,400	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	52,000
Compression per inch under stress at elastic limit	inch..	0.001350
Ultimate strength per square inch of original section	pounds..	105,400
Manner of failure		triple flexure

No. 2043.

Marks, $^{32}\underset{T_1}{\text{B}}\ \text{B}_6$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000350	.000250	0.	....	
3, 000	15, 000	.000500	.000150	0.	....	
4, 000	20, 000	.000650	.000150	0.	....	
5, 000	25, 000	.000800	.000150	0.	....	
6, 000	30, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001100	.000150	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001450	.000200	0.	....	
9, 200	46, 000	.001450	0.	....	....	
9, 400	47, 000	.001500	.000050	....	....	
9, 600	48, 000	.001500	0.	....	....	
9, 800	49, 000	.001550	.000050	....	....	
10, 000	50, 000	.001600	.000050	0.	....	
10, 200	51, 000	.001650	.000050	....	....	
10, 400	52, 000	.001750	.000100	....	....	
10, 600	53, 000	.001850	.000100	....	....	
10, 800	54, 000	.001900	.000050	....	....	Elastic limit.
11, 000	55, 000	.002200	.000300	.000300	.000300	
11, 200	56, 000	.002400	.000200	....	....	
11, 400	57, 000	.003000	.000600	....	....	
11, 600	58, 000	.003600	.000600	....	....	
11, 800	59, 000	.004500	.000900	....	....	
12, 000	60, 000	.005100	.000600	....	....	
12, 400	62, 000	.006500	.001400	....	....	
12, 800	64, 000	.008200	.001700	....	....	
13, 200	66, 000	.010000	.001800	....	....	
13, 600	68, 000	.011500	.001500	....	....	
14, 000	70, 000	.013150	.001650	....	....	
14, 400	72, 000	.015000	.901850	....	....	
14, 800	74, 000	.016700	.001700	....	....	
15, 200	76, 000	.018550	.001850	....	....	
15, 600	78, 000	.020550	.002000	....	....	
16, 000	80, 000	.023100	.002550	....	....	
16, 400	82, 000	.025550	.002450	....	....	
16, 800	84, 000	.028300	.002750	....	....	
17, 200	86, 000	.031250	.002950	....	....	
17, 600	88, 000	.034500	.003250	....	....	
18, 000	90, 000	.038100	.003900	....	....	
18, 400	92, 000	.042850	.004450	....	....	
18, 800	94, 000	.047550	.004700	....	....	
19, 200	96, 000	.0550	.007450	....	....	
19, 600	98, 000	.0650	.0100	....	....	
20, 000	100, 000	.0850	.0200	....	....	
20, 300	101, 500	.1050	.0200	....	....	Tensile strength.

General summary.

Specific gravity	7.8603
Tensile strength per square inch of original section ....pounds..	101, 500
Elastic limit per square inch of original section ....do...	54, 000
Elongation per inch after rupture ....inch..	0.1850
Elongation per inch under strain at elastic limit ....do...	.001900
Reduction in diameter at point of rupture ....do...	.095
Reduction in area after rupture, per centum of original section	34.0
Position of rupture	½ inch from middle of stem
Character of broken surface	granular; dull center
Elongation of inch sections	".23*, ".14

No. 580.

Marks, $^{32}\overset{B\ B_{5}}{T_{2}}$

Length, 3''.998.

Diameter, ''.799.

Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.		
5,000	10,000	.000300	.000150	0.		
7,500	15,000	.000500	.000200	0.		
10,000	20,000	.000600	.000100	0.		
12,500	25,000	.000750	.000150	0.		
15,000	30,000	.000900	.000150	0.		
17,500	35,000	.001050	.000150	0.		
20,000	40,000	.001250	.000200	0.		
22,500	45,000	.001350	.000100	—.000050	—.000050	
23,000	46,000	.001350	0.			
23,500	47,000	.001400	.000050			
24,000	48,000	.001450	.000050			
24,500	49,000	.001500	.000050			
25,000	50,000	.001500	0.	—.000050	0.	
25,500	51,000	.001350	.000050			
26,000	52,000	.001600	.000050			
26,500	53,000	.001650	.000050			
27,000	54,000	.001750	.000100			Elastic limit.
27,500	55,000	.001950	.000200	.000250	.000300	
28,000	56,000	.002400	.000450			
28,500	57,000	.002750	.000350			
29,000	58,000	.003500	.000750			
29,500	59,000	.004250	.000750			
30,000	60,000	.005050	.000800	.003100	.002850	
54,600	109,200					Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	54,000
Compression per inch under stress at elastic limit	inch..	0.001750
Ultimate strength per square inch of original section	pounds..	109,200
Manner of failure		triple flexure

No. 2058.

Marks, $^{32\,\mathrm{B\,B}}_{\mathrm{T}_1}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000550	.000150	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001200	.000250	0.	....	
8,000	40,000	.001350	.000150	0.	....	
9,000	45,000	.001550	.000200	0.	....	
9,200	46,000	.001600	.000050	....	....	
9,400	47,000	.001600	0.	....	....	
9,600	48,000	.001650	.000050	....	....	
9,800	49,000	.001650	0.	....	....	
10,000	50,000	.001700	.000050	0.	....	
10,200	51,000	.001750	.000050	....	....	
10,400	52,000	.001800	.000050	....	....	
10,600	53,000	.001800	0.	....	....	
10,800	54,000	.001850	.000050	....	....	
11,000	55,000	.001950	.000100	.000050	.000050	Elastic limit.
11,200	56,000	.002150	.000200	....	....	
11,400	57,000	.002450	.000300	....	....	
11,600	58,000	.002900	.000450	....	....	
11,800	59,000	.003450	.000550	....	....	
12,000	60,000	.004050	.000600	....	....	
12,400	62,000	.005650	.001600	....	....	
12,800	64,000	.006850	.001200	....	....	
13,200	66,000	.008550	.001700	....	....	
13,600	68,000	.010300	.001750	....	....	
14,000	70,000	.011650	.001350	....	....	
14,400	72,000	.013300	.001650	....	....	
14,800	74,000	.014800	.001500	....	....	
15,200	76,000	.016750	.001950	....	....	
15,600	78,000	.018550	.001800	....	....	
16,000	80,000	.020600	.002050	....	....	
16,400	82,000	.022900	.002300	....	....	
16,800	84,000	.025100	.002200	....	....	
17,200	86,000	.028300	.003200	....	....	
17,600	88,000	.030850	.002550	....	....	
18,000	90,000	.034250	.003400	....	....	
18,400	92,000	.037900	.003650	....	....	
18,800	94,000	.041500	.003600	....	....	
19,200	96,000	.046600	.005100	....	....	
19,600	98,000	.053000	.006400	....	....	
20,000	100,000	.061000	.008000	....	....	
20,400	102,000	.073250	.012250	....	....	
20,800	104,000	.1000	.026750	....	....	Tensile strength.

General summary.

Specific gravity	7.8649
Tensile strength per square inch of original section........pounds..	104,000
Elastic limit per square inch of original section........do...	55,000
Elongation per inch after rupture........inch..	0.1800
Elongation per inch under strain at elastic limit........do...	.001950
Reduction in diameter at point of rupture........do...	.084
Reduction in area after rupture, per centum of original section	30.7
Position of rupture	¼ inch from middle of stem
Character of broken surface	granular; dull center
Elongation of inch sections	″.23*, ″.13

No. 588.

Marks, $\genfrac{}{}{0pt}{}{32\text{ B B}_9}{\text{T}_2}$
Length, 4''.002.
Diameter, ''.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000500	.000200	0.	....	
10,000	20,000	.000650	.000150	0.	....	
12,500	25,000	.000750	.000100	0.	....	
15,000	30,000	.000950	.000200	0.	....	
17,500	35,000	.001100	.000150	0.	....	
20,000	40,000	.001300	.000200	0.	....	
22,500	45,000	.001400	.000100	0.	....	
23,000	46,000	.001450	.000050	....	....	
23,500	47,000	.001500	.000050	....	....	
24,000	48,000	.001500	0.	....	....	
24,500	49,000	.001550	.000050	....	....	
25,000	50,000	.001550	0.	0.	....	
25,500	51,000	.001600	.000050	....	....	
26,000	52,000	.001600	0.	....	....	
26,500	53,000	.001650	.000050	....	....	
27,000	54,000	.001750	.000050	....	....	
27,500	55,000	.001750	.000050	.000100	.000100	Elastic limit.
28,000	56,000	.001900	.000150	....	....	
28,500	57,000	.002050	.000150	....	....	
29,000	58,000	.002300	.000250	....	....	
29,500	59,000	.002750	.000450	....	....	
30,000	60,000	.003250	.000500	.001450	.001350	
30,500	61,000	.003800	.000550	....	....	
31,000	62,000	.004500	.000700	....	....	
31,500	63,000	.005150	.000650	....	....	
32,000	64,000	.005900	.000750	....	....	
32,500	65,000	.006750	.000850	.004500	.003050	
55,400	110,800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	55,000
Compression per inch under stress at elastic limit	inch..	0.001750
Ultimate strength per square inch of original section	pounds..	110,800
Manner of failure		triple flexure

No. 2059.

Marks, $^{33}\overset{B\,B_{10}}{T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000600	.000200	0.	....	
5, 000	25, 000	.000800	.000200	0.	....	
6, 000	30, 000	.001000	.000200	0.	....	
7, 000	35, 000	.001200	.000200	0.	....	
8, 000	40, 000	.001350	.000150	0.	....	
9, 000	45, 000	.001450	.000100	0.	....	
9, 200	46, 000	.001500	.000050	....	....	
9, 400	47, 000	.001500	0.	....	....	
9, 600	48, 000	.001550	.000050	....	....	
9, 800	49, 000	.001600	.000050	....	....	Elastic limit.
10, 000	50, 000	.001750	.000150	.000100	.000100	
10, 200	51, 000	.001900	.000150	....	....	
10, 400	52, 000	.002100	.000200	....	....	
10, 600	53, 000	.002400	.000300	....	....	
10, 800	54, 000	.002800	.000400	....	....	
11, 000	55, 000	.003150	.000350	....	....	
11, 200	56, 000	.003650	.000500	....	....	
11, 400	57, 000	.004100	.000500	....	....	
11, 600	58, 000	.004800	.000650	....	....	
11, 800	59, 000	.005600	.000800	....	....	
12, 000	60, 000	.006250	.000650	....	....	
12, 400	62, 000	.007250	.001500	....	....	
12, 800	64, 000	.009350	.001600	....	....	
13, 200	66, 000	.011000	.001650	....	....	
13, 600	68, 000	.012750	.001750	....	....	
14, 000	70, 000	.014250	.001500	....	....	
14, 400	72, 000	.016250	.002000	....	....	
14, 800	74, 000	.018150	.001900	....	....	
15, 200	76, 000	.020000	.001850	....	....	
15, 600	78, 000	.022100	.002100	....	....	
16, 000	80, 000	.024250	.002150	....	....	
16, 400	82, 000	.026750	.002500	....	....	
16, 800	84, 000	.029600	.002850	....	....	
17, 200	86, 000	.032300	.002700	....	....	
17, 600	88, 000	.035950	.003650	....	....	
18, 000	90, 000	.039300	.003350	....	....	
18, 400	92, 000	.043750	.004450	....	....	
18, 800	94, 000	.049500	.005750	....	....	
19, 200	96, 000	.057000	.007500	....	....	
19, 600	98, 000	.066500	.009500	....	....	
20, 000	100, 000	.0900	.0235	....	....	
20, 120	100, 600	.1150	.0250	....	....	Tensile strength.

General summary.

Specific gravity		7. 8578
Tensile strength per square inch of original section	pounds..	100, 600
Elastic limit per square inch of original section	do...	49, 000
Elongation per inch after rupture	inch..	0. 1550
Elongation per inch under strain at elastic limit	do...	.001600
Reduction in diameter at point of rupture	do...	.075
Reduction in area after rupture, per centum of original section		27 4
Position of rupture		″.4 from neck
Character of broken surface		granular; dull center
Elongation of inch sections		″.23*, ″.09

No. 589.

Marks, ${}^{32}\underset{T_2}{B}\,{}^{B_{10}}$

Length, 3''.999.

Diameter, ''.798.

Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000400	.000150	−.000050	−.000050	
10,000	20,000	.000600	.000200	−.000050	0.	
12,500	25,000	.000750	.000150	−.000050	0.	
15,000	30,000	.000900	.000150	0.	.000050	
17,500	35,000	.001100	.000200	0.	0.	
20,000	40,000	.001250	.000150	0.	0.	
20,500	41,000	.001300	.000050	....	....	
21,000	42,000	.001300	0.	....	....	
21,500	43,000	.001350	.000050	....	....	
22,000	44,000	.001400	.000050	....	....	
22,500	45,000	.001450	.000050	0.	....	
23,000	46,000	.001500	.000050	....	....	
23,500	47,000	.001550	.000050	....	....	
24,000	48,000	.001650	.000100	....	....	
24,500	49,000	.001750	.000100	....	....	Elastic limit.
25,000	50,000	.001900	.000150	.000250	.000250	
25,500	51,000	.002350	.000450	....	....	
26,000	52,000	.003000	.000650	....	....	
26,500	53,000	.003700	.000700	....	....	
27,000	54,000	.004500	.000800	....	....	
27,500	55,000	.005250	.000750	.003300	.003050	
55,400	110,800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	49,000
Compression per inch under stress at elastic limit	inch..	0.001750
Ultimate strength per square inch of original section	pounds..	110,800
Manner of failure		triple flexure

No. 2065.

Marks, $^{32}\underset{T_1}{B}\,B_{11}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	.000050	.000050	
2, 000	10, 000	.000450	.000300	.000100	.000050	
3, 000	15, 000	.000600	.000150	.000100	0.	
4, 000	20, 000	.000800	.000200	.000100	0.	
5, 000	25, 000	.000900	.000100	.000100	0.	
6, 000	30, 000	.001050	.000150	.000100	0.	
7, 000	35, 000	.001200	.000150	.000100	0.	
8, 000	40, 000	.001350	.000150	.000100	0.	
9, 000	45, 000	.001500	.000150	.000100	0.	
9, 200	46, 000	.001550	.000050	....	....	
9, 400	47, 000	.001650	.000100	....	....	
9, 600	48, 000	.001700	.000050	....	....	
9, 800	49, 000	.001750	.000050	....	....	
10, 000	50, 000	.001800	.000050	.000150	.000050	
10, 200	51, 000	.001850	.000050	....	....	
10, 400	52, 000	.001900	.000050	....	....	
10, 600	53, 000	.002000	.000100	....	....	
10, 800	54, 000	.002050	.000050	....	....	
11, 000	55, 000	.002150	.000100	.000200	.000050	Elastic limit.
11, 200	56, 000	.002400	.000250	....	....	
11, 400	57, 000	.002600	.000200	....	....	
11, 600	58, 000	.003100	.000500	....	....	
11, 800	59, 000	.003650	.000550	....	....	
12, 000	60, 000	.004150	.000500	....	....	
12, 400	62, 000	.005600	.001450	....	....	
12, 800	64, 000	.006900	.001300	....	....	
13, 200	66, 000	.008350	.001450	....	....	
13, 600	68, 000	.009850	.001500	....	....	
14, 000	70, 000	.011200	.001350	....	....	
14, 400	72, 000	.012750	.001650	....	....	
14, 800	74, 000	.014350	.001600	....	....	
15, 200	76, 000	.015950	.001600	....	....	
15, 600	78, 000	.017650	.001700	....	....	
16, 000	80, 000	.019300	.001650	....	....	
16, 400	82, 000	.021500	.002200	....	....	
16, 800	84, 000	.023600	.002100	....	....	
17, 200	86, 000	.026000	.002400	....	....	
17, 600	88, 000	.028250	.002250	....	....	
18, 000	90, 000	.031000	.002750	....	....	
18, 400	92, 000	.033550	.002550	....	....	
18, 800	94, 000	.037500	.003950	....	....	
19, 200	96, 000	.041100	.003600	....	....	
19, 600	98, 000	.045600	.004500	....	....	
20, 000	100, 000	.051050	.005450	....	....	
20, 400	102, 000	.057600	.006550	....	....	
20, 800	104, 000	.0700	.0124	....	....	
21, 200	106, 000	.0300	.0200	....	....	
21, 340	106, 700	.1150	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	**pounds**	**106, 700**
Elastic limit per square inch of original section	**do**	**55, 000**
Elongation per inch after rupture	**inch**	**0. 1750**
Elongation per inch under strain at elastic limit	**do**	**.002150**
Reduction in diameter at point of rupture	**do**	**.085**
Reduction in area after rupture, per centum of original section		**30. 7**
Position of rupture		**″.1 from middle of stem**
Character of broken surface		**granular; dull center**
Elongation of inch sections		**″.20*, ″.15**

No. 597.

Marks, $^{32}\underset{T_2}{B}{}^{B_{11}}$
Length, 3''.999.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000400	.000150	0.	....	
10,000	20,000	.000550	.000150	0.	....	
12,500	25,000	.000700	.000150	0.	....	
15,000	30,000	.000850	.000150	0.	....	
17,500	35,000	.001050	.000200	0.	....	
20,000	40,000	.001200	.000150	0.	....	
22,500	45,000	.001300	.000100	0.	....	
23,000	46,000	.001350	.000050	....	....	
23,500	47,000	.001350	0.	....	....	
24,000	48,000	.001400	000050	....	....	
24,500	49,000	.001400	0.	....	....	
25,000	50,000	.001500	.000100	0.	....	
25,500	51,000	.001500	0.	....	....	
26,000	52,000	.001500	0.	....	....	Elastic limit.
26,500	53,000	.001400	.000100	....	....	
27,000	54,000	.001350	.000050	....	....	
27,500	55,000	.001250	.000100	—.000400	—.000400	
28,000	56,000	.001150	.000100	....	....	
28,500	57,000	.001150	0.	....	....	
29,000	58,000	.001150	0.	....	....	
29,500	59,000	.001200	.000050	....	....	
30,000	60,000	.001300	.000100	—.000600	—.000200	
30,500	61,000	.001500	.000200	....	....	
31,000	62,000	.001700	.000200	....	....	
31,500	63,000	.001850	.000150	....	....	
32,000	64,000	.002050	.000200	....	....	
32,500	65,000	.002350	.000300	.000350	.000950	
33,000	66,000	.002850	.000500	....	....	
33,500	67,000	.003150	.000300	....	....	
34,000	68,000	.003650	.000500	....	....	
34,500	69,000	.004300	.000650	....	....	
35,000	70,000	.004850	.000550	.002400	.002050	
56,100	112,200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section..pounds.. 52,000
Compression per inch under stress at elastic limit..inch.. 0.001500
Ultimate strength per square inch of original section..pounds.. 112,200
Manner of failure..triple flexure

No. 2066.

Marks, $^{32}\frac{B}{T_1}{}^{B_{13}}$

Diameter, ″.505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000300	.000100	0.	....	
4, 000	20, 000	.000550	.000250	0.	....	
5, 000	25, 000	.000650	.000100	0.	....	
6, 000	30, 000	.000900	.000250	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001200	.000150	0.	....	
9, 000	45, 000	.001400	.000200	0.	....	
9, 200	46, 000	.001400	0.	....	....	
9, 400	47, 000	.001450	.000050	....	....	
9, 600	48, 000	.001500	.000050	....	....	
9, 800	49, 000	.001500	0.	....	....	
10, 000	50, 000	.001550	.000050	0.	....	
10, 200	51, 000	.001650	.000100	....	....	
10, 400	52, 000	.001750	.000100	....	....	Elastic limit.
10, 600	53, 000	.002050	.000300	....	....	
10, 800	54, 000	.002450	.000400	....	....	
11, 000	55, 000	.003000	.000550	....	....	
11, 200	56, 000	.003600	.000600	....	....	
11, 400	57, 000	.004150	.000550	....	....	
11, 600	58, 000	.005100	.000950	....	....	
11, 800	59, 000	.005800	.000700	....	....	
12, 000	60, 000	.006600	.000800	....	....	
12, 400	62, 000	.008100	.001500	....	....	
12, 800	64, 000	.009600	.001500	....	....	
13, 200	66, 000	.011200	.001600	....	....	
13, 600	68, 000	.013100	.001900	....	....	
14, 000	70, 000	.014900	.001800	....	....	
14, 400	72, 000	.016600	.001700	....	....	
14, 800	74, 000	.018600	.002000	....	....	
15, 200	76, 000	.020600	.002000	....	....	
15, 600	78, 000	.023000	.002400	....	....	
16, 000	80, 000	.025400	.002500	....	....	
16, 400	82, 000	.028000	.002600	....	....	
16, 800	84, 000	.031000	.003000	....	....	
17, 200	86, 000	.034500	.003500	....	....	
17, 600	88, 000	.037600	.003100	....	....	
18, 000	90, 000	.042250	.004650	....	....	
18, 400	92, 000	.047250	.005000	....	....	
18, 800	94, 000	.054000	.006750	....	....	
19, 200	96, 000	.064250	.010750	....	....	
19, 600	98, 000	.0850	.020750	....	....	
19, 820	99, 100	.1200	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 99, 100
Elastic limit per square inch of original section .... do... 52, 000
Elongation per inch after rupture ....inch.. 0. 2150
Elongation per inch under strain at elastic limit..do... .001750
Reduction in diameter at point of rupture..do... .005
Reduction in area after rupture, per centum of original section.. 34. 0
Position of rupture .... ¼ inch from middle of stem
Character of broken surface ....granular; dull center
Elongation of inch sections..″.23*, ″.20

No. 598.

Marks, $^{32}\frac{\text{B B}_{12}}{\text{T}_2}$
Length, 3''.995.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000150	.000150	0.	....	
5, 000	10, 000	.000300	.000150	0.	....	
7, 500	15, 000	.000500	.000200	0.	....	
10, 000	20, 000	.000600	.000100	0.	....	
12, 500	25, 000	.000800	.000200	0.	....	
15, 000	30, 000	.000950	.000150	0.	....	
17, 500	35, 000	.001150	.000200	0.	....	
20, 000	40, 000	.001250	.000100	0.	....	
20, 500	41, 000	.001300	.000050	....	....	
21, 000	42, 000	.001350	.000050	....	....	
21, 500	43, 000	.001400	.000050	....	....	
22, 000	44, 000	.001450	.000050	....	....	
22, 500	45, 000	.001450	0.	0.	....	
23, 000	46, 000	.001500	.000050	....	....	
23, 500	47, 000	.001500	0.	....	....	
24, 000	48, 000	.001500	0.	....	....	
24, 500	49, 000	.001500	0.	....	....	
25, 000	50, 000	.001550	.000050	0.	....	
25, 500	51, 000	.001600	.000050	....	....	Elastic limit.
26, 000	52, 000	.001700	.000100	....	....	
26, 500	53, 000	.001900	.000200	....	....	
27, 000	54, 000	.002250	.000350	....	....	
27, 500	55, 000	.002600	.000350	.000850	.000850	
28, 000	56, 000	.003000	.000400	....	....	
28, 500	57, 000	.003600	.000600	....	....	
29, 000	58, 000	.004200	.000600	....	....	
29, 500	59, 000	.004750	.000550	....	....	
30, 000	60, 000	.005300	.000550	.003250	.002400	
53, 600	107, 200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds.. 51, 000
Compression per inch under stress at elastic limit............inch.. 0. 001600
Ultimate strength per square inch of original section............pounds.. 107, 200
Manner of failure............triple flexure

No. 2067.

Marks, $^{32}\underset{\text{T}_1}{\text{B}}\,\text{B}_{12}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	—.000050	—.000050	
2,000	10,000	.000200	.000100	—.000050	0.	
3,000	15,000	.000350	.000150	—.000050	0.	
4,000	20,000	.000500	.000150	—.000050	0.	
5,000	25,000	.000600	.000100	—.000050	0.	
6,000	30,000	.000850	.000250	—.000050	0.	
7,000	35,000	.000950	.000100	—.000050	0.	
8,000	40,000	.001100	.000150	—.000050	0.	
9,000	45,000	.001300	.000200	—.000050	0.	
9,200	46,000	.001300	0.	....	....	
9,400	47,000	.001350	.000050	....	....	
9,600	48,000	.001350	0.	....	....	
9,800	49,000	.001400	.000050	....	....	
10,000	50,000	.001450	.000050	—.000050	0.	
10,200	51,000	.001500	.000050	....	....	
10,400	52,000	.001500	0.	....	....	
10,600	53,000	.001550	.000050	....	....	
10,800	54,000	.001600	.000050	....	....	
11,000	55,000	.001700	.000100	.000010	.000050	Elastic limit.
11,200	56,000	.001950	.000250	....	....	
11,400	57,000	.002300	.000350	....	....	
11,600	58,000	.002850	.000550	....	....	
11,800	59,000	.003450	.000600	....	....	
12,000	60,000	.004150	.000700	....	....	
12,400	62,000	.005600	.001450	....	....	
12,800	64,000	.006950	.001350	....	....	
13,200	66,000	.008600	.001650	....	....	
13,600	68,000	.010150	.001550	....	....	
14,000	70,000	.011750	.001600	....	....	
14,400	72,000	.013750	.002000	....	....	
14,800	74,000	.015400	.001650	....	....	
15,200	76,000	.017200	.001800	....	....	
15,600	78,000	.019300	.002100	....	....	
16,000	80,000	.021150	.001850	....	....	
16,400	82,000	.023700	.002550	....	....	
16,800	84,000	.026300	.062600	....	....	
17,200	86,000	.029000	.002700	....	....	
17,600	88,000	.032000	.003000	....	....	
18,000	90,000	.035400	.003400	....	....	
18,400	92,000	.039650	.004250	....	....	
18,800	94,000	.044050	.004400	....	....	
19,200	96,000	.050350	.006300	....	....	
19,600	98,000	.058400	.008050	....	....	
20 000	100,000	.0650	.0066	....	....	
20,300	101,500	.1050	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	101,500
Elastic limit per square inch of original section	do...	55,000
Elongation per inch after rupture	inch..	0.1600
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	.085
Reduction in area after rupture, per centum of original section		30.7
Position of rupture		½ inch from middle of stem
Character of broken surface		granular; dull center
Elongation of inch sections		″.23*, ″.09

No. 599.

Marks, $^{32}\genfrac{}{}{0pt}{}{B\,B_{13}}{T_2}$
Length, 4″.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000550	.000150	0.	....	
12, 500	25, 000	.000700	.000150	—. 000050	—. 000050	
15, 000	30, 000	.000900	.000200	—. 000050	0.	
17, 500	35, 000	.001050	.000150	—. 000050	0.	
20, 000	40, 000	.001200	.000150	—. 000050	0.	
22, 500	45, 000	.001350	.000150	—. 000050	0.	
23, 000	46, 000	.001350	0.	....	....	
23, 500	47, 000	.001400	.000050	....	....	
24, 000	48, 000	.001450	.000050	....	....	
24, 500	49, 000	.001500	.000050	....	....	
25, 000	50, 000	.001500	0.	—. 000050	0.	
25, 500	51, 000	.001550	.000050	....	....	
26, 000	52, 000	.001600	.000050	....	....	Elastic limit.
26, 500	53, 000	.001700	.000100	....	....	
27, 000	54, 000	.001800	.000100	....	....	
27, 500	55, 000	.002050	.000250	.000300	.000350	
28, 000	56, 000	.002500	.000450	....	....	
28, 500	57, 000	.003100	.000600	....	....	
29, 000	58, 000	.003700	.000600	....	....	
29, 500	59, 000	.004300	.006600	....	....	
30, 000	60, 000	.004850	.000550	.002750	.002450	
56, 700	113, 400	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	52, 000
Compression per inch under stress at elastic limit	inch..	0. 001600
Ultimate strength per square inch of original section	pounds..	113, 400
Manner of failure		triple flexure

No. 2069.

Marks, $\frac{^{32}B\ B_{14}}{T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000350	.000200	0.	....	
3, 000	15, 000	.000600	.000250	0.	....	
4, 000	20, 000	.000750	.000150	0.	....	
5, 000	25, 000	.000900	.000150	0.	....	
6, 000	30, 000	.001000	.000100	0.	....	
7, 000	35, 000	.001200	.000200	0.	....	
8, 000	40, 000	.001350	.000150	0.	....	
9, 000	45, 000	.001500	.000150	0.	....	
9, 200	46, 000	.001550	.000050	....	....	
9, 400	47, 000	.001600	.000050	....	....	
9, 600	48, 000	.001650	.000050	....	....	
9, 800	49, 000	.001700	.000050	....	....	
10, 000	50, 000	.001750	.000050	.000050	.000050	
10, 200	51, 000	.001800	.000050	....	....	
10, 400	52, 000	.001900	.000100	....	....	
10, 600	53, 000	.001950	.000050	....	....	
10, 800	54, 000	.002050	.000100	.000250	.000200	Elastic limit.
11, 000	55, 000	.002200	.000150	....	....	
11, 200	56, 000	.002450	.000250	....	....	
11, 400	57, 000	.002800	.000350	....	....	
11, 600	58, 000	.003300	.000500	....	....	
11, 800	59, 000	.003800	.000500	....	....	
12, 000	60, 000	.004750	.000950	....	....	
12, 400	62, 000	.006150	.001400	....	....	
12, 800	64, 000	.007600	.091450	....	....	
13, 200	66, 000	.009150	.001550	....	....	
13, 600	68, 000	.010750	.001600	....	....	
14, 000	70, 000	.012600	.001850	....	....	
14, 400	72, 000	.014250	.001650	....	....	
14, 800	74, 000	.016000	.001750	....	....	
15, 200	76, 000	.018100	.002100	....	....	
15, 600	78, 000	.020000	.001900	....	....	
16, 000	80, 000	.022250	.002250	....	....	
16, 400	82, 000	.024600	.002350	....	....	
16, 800	84, 000	.027000	.002400	....	....	
17, 200	86, 000	.030000	.003000	....	....	
17, 600	88, 000	.033250	.003750	....	....	
18, 000	90, 000	.036750	.003500	....	....	
18, 400	92, 000	.041000	.004250	....	....	
18, 800	94, 000	.046500	.005500	....	....	
19, 200	96, 000	.053500	.007000	....	....	
19, 600	98, 000	.061500	.008000	....	....	
20, 000	100, 000	.0750	.0135	....	....	
20, 280	101, 400	.1000	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	101, 400
Elastic limit per square inch of original section	do...	54, 000
Elongation per inch after rupture	inch .	0. 1600
Elongation per inch under strain at elastic limit	do...	.002050
Reduction in diameter at point of rupture	do...	.095
Reduction in area after rupture, per centum of original section		34. 0
Position of rupture		¼ inch from middle of stem
Character of broken surface		granular; dull center
Elongation of inch sections		″.22*, ″.10

No. 599.

Marks, $^{32}\frac{B\,B_{12}}{T_2}$
Length, 4''.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000550	.000150	0.	....	
12, 500	25, 000	.000700	.000150	–.000050	–.000050	
15, 000	30, 000	.000900	.000200	–.000050	0.	
17, 500	35, 000	.001050	.000150	–.000050	0.	
20, 000	40, 000	.001200	.000150	–.000050	0.	
22, 500	45, 000	.001350	.000150	–.000050	0.	
23, 000	46, 000	.001350	0.	....	....	
23, 500	47, 000	.001400	.000050	....	....	
24, 000	48, 000	.001450	.000050	....	....	
24, 500	49, 000	.001500	.000050	....	....	
25, 000	50, 000	.001500	0.	–.000050	0.	
25, 500	51, 000	.001550	.000050	....	....	
26, 000	52, 000	.001600	.000050	....	....	Elastic limit.
26, 500	53, 000	.001700	.000100	....	....	
27, 000	54, 000	.001800	.000100	....	....	
27, 500	55, 000	.002050	.000250	.000300	.000350	
28, 000	56, 000	.002500	.000450	....	....	
28, 500	57, 000	.003100	.000600	....	....	
29, 000	58, 000	.003700	.000600	....	....	
29, 500	59, 000	.004300	.006600	....	....	
30, 000	60, 000	.004850	.000550	.002750	.002450	
56, 700	113, 400	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	52, 000
Compression per inch under stress at elastic limit	inch..	0. 001600
Ultimate strength per square inch of original section	pounds..	113 400
Manner of failure		triple flexure

No. 2069.

Marks, $^{32}\frac{B}{T_1}B_{14}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.		
2, 000	10, 000	.000350	.000200	0.		
3, 000	15, 000	.000600	.000250	0.		
4, 000	20, 000	.000750	.000150	0.		
5, 000	25, 000	.000900	.000150	0.		
6, 000	30, 000	.001000	.000100	0.		
7, 000	35, 000	.001200	.000200	0.		
8, 000	40, 000	.001350	.000150	0.		
9, 000	45, 000	.001500	.000150	0.		
9, 200	46, 000	.001550	.000050			
9, 400	47, 000	.001600	.000050			
9, 600	48, 000	.001650	.000050			
9, 800	49, 000	.001700	.000050			
10, 000	50, 000	.001750	.000050	.000050	.000050	
10, 200	51, 000	.001800	.000050			
10, 400	52, 000	.001900	.000100			
10, 600	53, 000	.001950	.000050			
10, 800	54, 000	.002050	.000100	.000250	.000200	Elastic limit.
11, 000	55, 000	.002200	.000150			
11, 200	56, 000	.002450	.000250			
11, 400	57, 000	.002800	.000350			
11, 600	58, 000	.003300	.000500			
11, 800	59, 000	.003800	.000500			
12, 000	60, 000	.004750	.000950			
12, 400	62, 000	.006150	.001400			
12, 800	64, 000	.007600	.091450			
13, 200	66, 000	.009150	.001550			
13, 600	68, 000	.010750	.001600			
14, 000	70, 000	.012600	.001850			
14, 400	72, 000	.014250	.001650			
14, 800	74, 000	.016000	.001750			
15, 200	76, 000	.018100	.002100			
15, 600	78, 000	.020000	.001900			
16, 000	80, 000	.022250	.002250			
16, 400	82, 000	.024600	.002350			
16, 800	84, 000	.027000	.002400			
17, 200	86, 000	.030000	.003000			
17, 600	88, 000	.033250	.003750			
18, 000	90, 000	.036750	.003500			
18, 400	92, 000	.041000	.004250			
18, 800	94, 000	.046500	.005500			
19, 200	96, 000	.053500	.007000			
19, 600	98, 000	.061500	.008000			
20, 000	100, 000	.0750	.0135			
20, 280	101, 400	.1000	.0250			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	101, 400
Elastic limit per square inch of original section	do...	54, 000
Elongation per inch after rupture	inch .	0. 1600
Elongation per inch under strain at elastic limit	do...	.002050
Reduction in diameter at point of rupture	do...	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		¼ inch from middle of stem
Character of broken surface		granular; dull center
Elongation of inch sections		".22*, ".10

No. 601.

Marks, $^{32}\frac{\text{B}}{\text{T}_2}\text{B}_{14}$
Length, 4″.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000450	.000150	0.	....	
10,000	20,000	.000600	.000150	0.	....	
12,500	25,000	.000750	.000150	0.	....	
15,000	30,000	.000900	.000150	—.000050	—.000050	
17,500	35,000	.001050	.000150	—.000100	—.000050	
20,000	40,000	.001250	.000200	—.000100	0.	
22,500	45,000	.001350	.000100	—.000100	0.	
25,000	50,000	.001500	.000150	—.000100	0.	
25,500	51,000	.001500	0.	....	....	
26,000	52,000	.001500	0.	....	....	
26,500	53,000	.001500	0.	....	....	
27,000	54,000	.001500	0.	....	....	
27,500	55,000	.001500	0.	—.000150	—.000050	
28,000	56,000	.001550	.000050	....	....	
28,500	57,000	.001600	.000050	....	....	Elastic limit.
29,000	58,000	.001800	.000200	....	....	
29,500	59,000	.002050	.000250	....	....	
30,000	60,000	.002550	.000500	.000700	.000850	
30,500	61,000	.003050	.000500	....	....	
31,000	62,000	.003750	.000700	....	....	
31,500	63,000	.004400	.000650	....	....	
32,000	64,000	.005250	.000850	....	....	
32,500	65,000	.006000	.000750	....	....	
55,900	111,800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	57,000
Compression per inch under stress at elastic limit	inch..	0.001600
Ultimate strength per square inch of original section	pounds..	111,800
Manner of failure		triple flexure

No. 2070.

Marks, $^{32}\overset{\text{B}}{\text{T}_1}\text{B}_{18}$
Diameter, ″.505.
Sectional area, 20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	....	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000350	.000150	0.	....	
4, 000	20, 000	.000500	.000150	0.	....	
5, 000	25, 000	.000700	.000200	0.	....	
6, 000	30, 000	.000850	.000150	0.	....	
7, 000	35, 000	.001050	.000200	0.	....	
8, 000	40, 000	.001200	.000150	0.	....	
9, 000	45, 000	.001300	.000100	0.	....	
9, 200	46, 000	.001350	.000050	....	....	
9, 400	47, 000	.001400	.000050	....	....	
9, 600	48, 000	.001500	.000100	....	....	
9, 800	49, 000	.001550	.000050	....	....	
10, 000	50, 000	.001600	.000050	.0	....	Elastic limit.
10, 200	51, 000	.001750	.000150	....	....	
10, 400	52, 000	.002000	.000250	....	....	
10, 600	53, 000	.002400	.000400	....	....	
10, 800	54, 000	.002650	.000250	....	....	
11, 000	55, 000	.003350	.000700	....	....	
11, 200	56, 000	.003850	.000500	....	....	
11, 400	57, 000	.004600	.000750	....	....	
11, 600	58, 000	.005250	.000650	....	....	
11, 800	59, 000	.005950	.000700	....	....	
12, 000	60, 000	.006450	.000500	....	....	
12, 400	62, 000	.008000	.001550	....	....	
12, 800	64, 000	.009350	.001350	....	....	
13, 200	66, 000	.010650	.001300	....	....	
13, 600	68, 000	.012250	.001600	....	....	
14, 000	70, 000	.014000	.001750	....	....	
14, 400	72, 000	.015600	.001600	....	....	
14, 800	74, 000	.017250	.001650	....	....	
15, 200	76, 000	.019050	.001800	....	....	
15, 600	78, 000	.021000	.001950	....	....	
16, 000	80, 000	.023250	.002250	....	....	
16, 400	82, 000	.025500	.002250	....	....	
16, 800	84, 000	.028000	.002500	....	....	
17, 200	86, 000	.030500	.002500	....	....	
17, 600	88, 000	.033100	.002600	....	....	
18, 000	90, 000	.037000	.003900	....	....	
18, 400	92, 000	.040600	.003600	....	....	
18, 800	94, 000	.044900	.004300	....	....	
19, 200	96, 000	.049500	.004600	....	....	
19, 600	98, 000	.051550	.002050	....	....	
20, 000	100, 000	.061000	.009450	....	....	
20, 500	102, 000	.0900	.0290	....	....	
20, 605	103, 025	.1150	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	103, 025
Elastic limit per square inch of original section	do...	50,000
Elongation per inch after rupture	inch..	0. 1650
Elongation per inch under strain at elastic limit	do...	.001600
Reduction in diameter at point of rupture	do...	.075
Reduction in area after rupture, per centum of original section		27. 4
Position of rupture		″.45 from middle of stem
Character of broken surface		granular; dull center
Elongation of inch sections		″.20*, ″18

No. 602.

Marks, $^{32}\substack{B\\T_2}B_{16}$
Length, 4″.
Diameter, ″.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	. 000150	. 000150	0.	....	
5, 000	10, 000	. 000300	. 000150	0.	....	
7, 500	15, 000	. 000450	. 000150	0.	....	
10, 000	20, 000	. 000600	. 000150	0.	....	
12, 500	25, 000	. 000750	. 000150	0.	....	
15, 000	30, 000	. 000950	. 000200	0.	....	
17, 500	35, 000	. 001050	. 000100	—. 000050	—. 000050	
20, 000	40, 000	. 001200	. 000150	—. 000050	0.	
20, 500	41, 000	. 001250	. 000050	....	....	
21, 000	42, 000	. 001250	0.	....	....	
21, 500	43, 000	. 001300	. 000050	....	....	
22, 000	44, 000	. 001350	. 000050	....	....	
22, 500	45, 000	. 001350	0.	—. 000050	0.	
23, 000	46, 000	. 001400	. 000050	....	....	
23, 500	47, 000	. 001450	. 000050	....	....	
24, 000	48, 000	. 001500	. 000050	....	....	
24, 500	49, 000	. 001500	0.	....	....	
25, 000	50, 000	. 001500	0.	0.	. 000050	
25, 500	51, 000	. 001550	. 000050	....	....	
26, 000	52, 000	. 001650	. 000100	....	....	Elastic limit.
26, 500	53, 000	. 001950	. 000300	....	....	
27, 000	54, 000	. 002450	. 000500	....	....	
27, 500	55, 000	. 003200	. 000750	. 001400	. 001400	
28, 000	56, 000	. 003800	. 000600	....	....	
28, 500	57, 000	. 004500	. 000700	....	....	
29, 000	58, 000	. 005500	. 001000	....	....	
29, 500	59, 000	. 006450	. 000950	....	....	
30, 000	60, 000	. 007300	. 000850	. 005200	. 003800	
56, 900	113, 800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	52, 000
Compression per inch under stress at elastic limit	inch..	0. 001650
Ultimate strength per square inch of original section	pounds..	113, 800
Manner of failure		triple flexure

No. 2061.

Marks, $^{32}\frac{\mathrm{B}}{\mathrm{T}_1}\mathrm{B}_{16}$.
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000050	.000050	0.	....	
2,000	10,000	.000150	.000100	0.	....	
3,000	15,000	.000250	.000100	0.	....	
4,000	20,000	.000350	.000100	0.	....	
5,000	25,000	.000550	.000200	0.	....	
6,000	30,000	.000700	.000150	0.	....	
7,000	35,000	.000900	.000200	0.	....	
8,000	40,000	.001050	.000150	0.	....	
9,000	45,000	.001350	.000300	0.	....	
9,200	46,000	.001450	.000100	....	....	
9,400	47,000	.001500	.000050	....	....	
9,600	48,000	.001550	.000050	....	....	
9,800	49,000	.001550	0.	....	....	
10,000	50,000	.001600	.000050	0.	....	
10,200	51,000	.001650	.000050	....	....	
10,400	52,000	.001700	.000050	....	....	Elastic limit.
10,600	53,000	.001850	.000150	....	....	
10,800	54,000	.002150	.000300	....	....	
11,000	55,000	.002600	.000450	....	....	
11,200	56,000	.003100	.000500	....	....	
11,400	57,000	.003550	.000450	....	....	
11,600	58,000	.004100	.000550	....	....	
11,800	59,000	.004900	.000800	....	....	
12,000	60,000	.005500	.000600	....	....	
12,400	62,000	.007100	.001600	....	....	
12,800	64,000	.008600	.001500	....	....	
13,200	66,000	.010200	.001600	....	....	
13,600	68,000	.011000	.000800	....	....	
14,000	70,000	.013300	.002300	....	....	
14,400	72,000	.015000	.001700	....	....	
14,800	74,000	.017000	.002000	....	....	
15,200	76,000	.018900	.001900	....	....	
15,600	78,000	.020600	.001700	....	....	
16,000	80,000	.022950	.002350	....	....	
16,400	82,000	.025200	.002250	....	....	
16,800	84,000	.027650	.002450	....	....	
17,200	86,000	.030600	.002950	....	....	
17,600	88,000	.033250	.002650	....	....	
18,000	90,000	.037550	.004300	....	....	
18,400	92,000	.041750	.004200	....	....	
18,800	94,000	.046200	.004450	....	....	
19,200	96,000	.052250	.006050	....	....	
19,600	98,000	.060500	.008250	....	....	
20,000	100,000	.071000	.010500	....	....	
20,400	102,000	.0950	.0240	....	....	
20,480	102,400	.1150	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	102,400
Elastic limit per square inch of original section	do...	52,000
Elongation per inch after rupture	inch..	0.1600
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	.085
Reduction in area after rupture, per centum of original section		30.7
Position of rupture		″.4 from neck
Character of broken surface		granular; dull center
Elongation of inch sections		″.23*, ″ 09

No. 592.

Marks, $^{32}\frac{B\ B_{16}}{T_2}$
Length, 4″.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000300	.000200	0.	....	
7,500	15,000	.000450	.000150	0.	....	
10,000	20,000	.000600	.000150	0.	....	
12,500	25,000	.000750	.000150	0.	....	
15,000	30,000	.000900	.000150	0.	....	
17,500	35,000	.001100	.000200	0.	....	
20,000	40,000	.001250	.000150	0.	....	
22,500	45,000	.001450	.000200	0.	....	
23,000	46,000	.001450	0.	....	....	
23,500	47,000	.001500	.000050	....	....	
24,000	48,000	.001500	0.	....	....	
24,500	49,000	.001500	.000050	....	....	
25,000	50,000	.001500	0.	0.	....	
25,500	51,000	.001500	0.	....	....	
26,000	52,000	.001500	0.	....	....	
26,500	53,000	.001500	—.000050	....	....	Elastic limit.
27,000	54,000	.001450	—.000050	....	....	
27,500	55,000	.001300	—.000150	—.000450	—.000450	
28,000	56,000	.001150	—.000150	—.000650	—.000200	
28,500	57,000	.000950	—.000200	....	....	
29,000	58,000	.000600	—.000350	....	....	
29,500	59,000	.000400	—.000200	....	....	
30,000	60,000	.000200	—.000200	—.001700	—.002350	
53,200	106,400	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds.. 53,000
Compression per inch under stress at elastic limit ....inch.. 0.001500
Ultimate strength per square inch of original section ....pounds.. 106,400
Manner of failure ....triple flexure

No. 2071.

Marks, $^{32}\genfrac{}{}{0pt}{}{B}{T_1}B_{17}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000350	.000150	0.	....	
4, 000	20, 000	.000500	.000150	0.	....	
5, 000	25, 000	.000650	.000150	0.	....	
6, 000	30, 000	.000800	.000150	0.	....	
7, 000	35, 000	.000950	.000150	0.	....	
8, 000	40, 000	.001100	.000150	0.	....	
9, 000	45, 000	.001250	.000150	0.	....	
9, 200	46, 000	.001300	.000050	....	....	
9, 400	47, 000	.001350	.000050	....	....	
9, 600	48, 000	.001400	.000050	....	....	
9, 800	49, 000	.001450	.000050	....	....	
10, 000	50, 000	.001500	.000050	0.	....	
10, 200	51, 000	.001500	0.	....	....	
10, 400	52, 000	.001600	.000100	....	....	Elastic limit.
10, 600	53, 000	.001900	.000300	....	....	
10, 800	54, 000	.002400	.000500	....	....	
11, 000	55, 000	.002850	.000450	....	....	
11, 200	56, 000	.003350	.000500	....	....	
11, 400	57, 000	.004000	.000650	....	....	
11, 600	58, 000	.004700	.000700	....	....	
11, 800	59, 000	.005600	.000900	....	....	
12, 000	60, 000	.006100	.000500	....	....	
12, 400	62, 000	.007750	.001650	....	....	
12, 800	64, 000	.009900	.002150	....	....	
13, 200	66, 000	.011050	.001150	....	....	
13, 600	68, 000	.012900	.001850	....	....	
14, 000	70, 000	.014550	.001650	....	....	
14, 400	72, 000	.016250	.001700	....	....	
14, 800	74, 000	.018100	.001850	....	....	
15, 200	76, 000	.020100	.002000	....	....	
15, 600	78, 000	.022000	.001900	....	....	
16, 000	80, 000	.024450	.002450	....	....	
16, 400	82, 000	.027000	.002550	....	....	
16, 800	84, 000	.030250	.003250	....	....	
17, 200	86, 000	.033350	.003100	....	....	
17, 600	88, 000	.036750	.003400	....	....	
18, 000	90, 000	.041000	.004250	....	....	
18, 400	92, 000	.045350	.004350	....	....	
18, 800	94, 000	.051750	.006400	....	....	
19, 200	66, 000	.059500	.007750	....	....	
19, 600	98, 000	.0750	.0155	....	....	
20, 000	100, 000	.1000	.0250	....	....	
20, 010	100, 050	.1050	.0050	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	**pounds**	**100, 050**
Elastic limit per square inch of original section	**do**	**52, 000**
Elongation per inch after rupture	**inch**	**0. 1700**
Elongation per inch under strain at elastic limit	**do**	**.001600**
Reduction in diameter at point of rupture	**do**	**.095**
Reduction in area after rupture, per centum of original section		**34. 0**
Position of rupture		**¼ inch from middle of stem**
Character of broken surface		**granular; dull center**
Elongation of inch sections		**″.23*, ″.11**

No. 603.

Marks, $^{32}\frac{\text{B}}{\text{T}_2}\text{B}_{17}$
Length, 4″.
Diameter ″.797.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000500	.000200	0.	....	
10,000	20,000	.000650	.000150	0.	....	
12,500	25,000	.000800	.000150	0.	....	
15,000	30,000	.001000	.000200	0.	....	
17,500	35,000	.001200	.000200	0.	....	
20,000	40,000	.001350	.000150	.000050	.000050	
20,500	41,000	.001350	0.	....	....	
21,000	42,000	.001400	.000050	....	....	
21,500	43,000	.001450	.000050	....	....	
22,000	44,000	.001500	.000050	....	....	
22,500	45,000	.001550	.000050	.000100	.000050	
23,000	46,000	.001550	0.	....	....	
23,500	47,000	.001600	.000050	....	....	
24,000	48,000	.001650	.000050	....	....	
24,500	49,000	.001750	.000100	....	....	
25,000	50,000	.001750	0.	.000200	.000100	Elastic limit.
25,500	51,000	.001950	.000200	....	....	
26,000	52,000	.002150	.000200	....	....	
26,500	53,000	.002600	.000450	....	....	
27,000	54,000	.003350	.000750	....	....	
27,500	55,000	.004450	.001100	.002700	.002500	
28,000	56,000	.005500	.001050	....	....	
28,500	57,000	.006500	.001000	....	....	
29,000	58,000	.007600	.001100	....	....	
29,500	59,000	.008250	.000650	....	....	
30,000	60,000	.009750	.001500	.007550	.004850	
52,500	105,000	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds	50,000
Compression per inch under stress at elastic limit	inch	0.001750
Ultimate strength per square inch of original section	pounds	105,000
Manner of failure		triple flexure

No. 2060.

Marks, $^{32}\frac{B\,B_{18}}{T_1}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	. 000100	. 000100	0.	....	
2, 000	10, 000	. 000209	. 000100	0.	....	
3, 000	15, 000	. 000300	. 000100	0.	....	
4, 000	20, 000	. 000500	. 000200	0.	....	
5, 000	25, 000	. 000650	. 000150	0.	....	
6, 000	30, 000	. 000850	. 000200	0.	....	
7, 000	35, 000	. 000950	. 000100	0.	....	
8, 000	40, 000	. 001100	. 000150	0.	....	
9, 000	45, 000	. 001300	. 000200	0.	....	
9, 200	46, 000	. 001350	. 000050	....	....	
9, 400	47, 000	. 001350	0.	....	....	
9, 600	48, 000	. 001400	. 000050	....	....	
9, 800	49, 000	. 001400	0.	....	....	
10, 000	50, 000	. 001450	. 000050	0.	....	
10, 200	51, 000	. 001550	. 000100	....	....	
10, 400	52, 000	. 001600	. 000050	....	....	
10, 600	53, 000	. 001600	0.	....	....	Elastic limit.
10, 800	54, 000	. 001850	. 000250	....	....	
11, 000	55, 000	. 002350	. 000500	....	....	
11, 200	56, 000	. 002950	. 000600	....	....	
11, 400	57, 000	. 003600	. 000650	....	....	
11, 600	58, 000	. 004250	. 000650	....	....	
11, 800	59, 000	. 004850	. 000600	....	....	
12, 000	60, 000	. 005400	. 000550	....	....	
12, 400	62, 000	. 007200	. 001800	....	....	
12, 800	64, 000	. 008600	. 001400	....	....	
13, 200	66, 000	. 010150	. 001550	....	....	
13, 600	68, 000	. 011800	. 001650	....	....	
14, 000	70, 000	. 013150	. 001350	....	....	
14, 400	72, 000	. 015000	. 001850	....	....	
14, 800	74, 000	. 016600	. 001600	....	....	
15, 200	76, 000	. 018350	. 001750	....	....	
15, 600	78, 000	. 020350	. 002000	....	....	
16, 000	80, 000	. 022750	. 002400	....	....	
16, 400	82, 000	. 025050	. 002300	....	....	
16, 800	84, 000	. 027500	. 002450	....	....	
17, 200	86, 000	. 030000	. 002500	....	....	
17, 600	88, 000	. 033050	. 003050	....	....	
18, 000	90, 000	. 036550	. 003500	....	....	
18, 400	92, 000	. 040500	. 003950	....	....	
18, 800	94, 000	. 045000	. 004500	....	....	
19, 200	96, 000	. 050000	. 005000	....	....	
19, 600	98, 000	. 057300	. 007300	....	....	
20, 000	100, 000	. 066250	. 008950	....	....	
20, 400	102, 000	. 0900	. 023750	....	....	
20, 620	103, 100	. 1150	. 0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	103, 100
Elastic limit per square inch of original section............do...	53, 000
Elongation per inch after rupture............inch..	0. 1800
Elongation per inch under strain at elastic limit ....do...	. 001600
Reduction in diameter at point of rupture............do...	. 095
Reduction in area after rupture, per centum of original section............	34. 0
Position of rupture............	".1 from middle of stem
Character of broken surface............	granular; dull eccentric spot
Elongation of inch sections............	".22*, ".14

No. 591.

Marks, $^{32}{}^{B}_{T_2}{}^{Bu}$
Length, 3''.998.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000550	.000150	0.	....	
12, 500	25, 000	.000750	.000200	0.	....	
15, 000	30, 000	.000900	.000150	0.	....	
17, 500	35, 000	.001100	.000200	.000100	.000100	
20, 000	40, 000	.001300	.000200	.000100	0.	
22, 500	45, 000	.001500	.000200	.000150	.000050	
25, 000	50, 000	.001650	.000150	.000150	0.	
25, 500	51, 000	.001750	.000100	....	....	
26, 000	52, 000	.001750	0.	....	....	
26, 500	53, 000	.001750	0.	....	....	
27, 000	54, 000	.001800	.000050	....	....	
27, 500	55, 000	.001900	.000100	.000150	0.	
28, 000	56, 000	.001800	.000100	....	....	
28, 500	57, 000	.001800	0.	....	....	
29, 000	58, 000	.001800	0.	....	....	
29, 500	59, 000	.001750	.000050	....	....	
30, 000	60, 000	.001800	.000050	—.000100	—.000250	Elastic limit.
30, 500	61, 000	.002000	.000200	....	....	
31, 000	62, 000	.002300	.000300	....	....	
31, 500	63, 000	.002600	.000300	....	....	
32 000	64, 000	.002950	.000350	....	....	
32, 500	65, 000	.003350	.000400	.001250	.001350	
33, 000	66, 000	.003850	.000500	....	....	
33, 500	67, 000	.004250	.000400	....	....	
34, 000	68, 000	.004900	.000650	....	....	
34, 500	69, 000	.005500	.000600	....	....	
35, 000	70, 000	.006300	.000800	.004000	.002750	
55, 400	110, 800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section..pounds.. 60, 000
Compression per inch under stress at elastic limit..inch.. 0. 001800
Ultimate strength per square inch of original section..pounds.. 110, 800
Manner of failure..triple flexure

No. 2072.

Marks, $^{32\,B\,B_{19}}_{T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000350	.000200	0.	....	
3, 000	15, 000	.000550	.000200	0.	....	
4, 000	20, 000	.000800	.000250	0.	....	
5, 000	25, 000	.000950	.000150	0.	....	
6, 000	30, 000	.001150	.000200	0.	....	
7, 000	35, 000	.001300	.000150	0.	....	
8, 000	40, 000	.001450	.000150	0.	....	
9, 000	45, 000	.001650	.000200	.000050	.000050	
9, 200	46, 000	.001700	.000050	....	....	
9, 400	47, 000	.001700	0.	....	....	
9, 600	48, 000	.001750	.000050	....	....	
9, 800	49, 000	.001800	.000050	....	....	
10, 000	50, 000	.001800	0.	.000050	0.	
10, 200	51, 000	.001850	.000050	....	....	
10, 400	52, 000	.001900	.000050	....	....	Elastic limit.
10, 600	53, 000	.002050	.000150	....	....	
10, 800	54, 000	.002350	.000300	....	....	
11, 000	55, 000	.002800	.000450	....	....	
11, 200	56, 000	.093300	.000500	....	....	
11, 400	57, 000	.003850	.000550	....	....	
11, 600	58, 000	.004600	.000750	....	....	
11, 800	59, 000	.005300	.000700	....	....	
12, 000	60, 000	.006200	.000900	....	....	
12, 400	62, 000	.007750	.001550	....	....	
12, 800	64, 000	.009250	.001500	....	....	
13, 200	66, 000	.010750	.001500	....	....	
13, 600	68, 000	.012700	.001950	....	....	
14, 000	70, 000	.014700	.002000	....	....	
14, 400	72, 000	.016200	.001500	....	....	
14, 800	74, 000	.018250	.002050	....	....	
15, 200	76, 000	.020250	.002000	....	....	
15, 600	78, 000	.022550	.002300	....	....	
16, 000	80, 000	.025100	.002550	....	....	
16, 400	82, 000	.027600	.002500	....	....	
16, 800	84, 000	.031050	.003450	....	....	
17, 200	86, 000	.034100	.003050	....	....	
17, 600	88, 000	.038000	.003900	....	....	
18, 000	90, 000	.042050	.004050	....	....	
18, 400	92, 000	.047500	.005450	....	....	
18, 800	94, 000	.054650	.007150	....	....	
19, 200	96, 000	.062200	.007550	....	....	
19, 600	98, 000	.0850	.0228	....	....	
19, 980	99, 900	.1200	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	99, 900
Elastic limit per square inch of original section	do...	52 000
Elongation per inch after rupture	inch..	0. 1956
Elongation per inch under strain at elastic limit	do...	.001900
Reduction in diameter at point of rupture	do...	.095
Reduction in area after rupture, per centum of original section		34. 0
Position of rupture		″.45 from middle of stem
Character of broken surface		granular; dull center
Elongation of inch sections		″.27*, ″.12

No. 604.

Marks, $^{32}\,\overset{B}{T_2}\,^{B_{19}}$

Length, 3".997.

Diameter, ".798.

Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000350	.000050	0.	....	
10,000	20,000	.000600	.000250	0.	....	
12,500	25,000	.000750	.000150	0.	....	
15,000	30,000	.000900	.000150	0.	....	
17,500	35,000	.001100	.000200	0.	....	
20,000	40,000	.001250	.000150	0.	....	
22,500	45,000	.001450	.000200	0.	....	
23,000	46,000	.001500	.000050	....	....	
23,500	47,000	.001500	0.	....	....	
24,000	48,000	.001500	0.	....	....	
24,500	49,000	.021550	.000050	....	....	
25,000	50,000	.001600	.000050	0.	....	
25,500	51,000	.001600	0.	....	....	
26,000	52,000	.001650	.000050	....	....	
26,500	53,000	.001700	.000050	....	....	
27,000	54,000	.001750	.000050	....	....	Elastic limit.
27,500	55,000	.001650	—.000200	—.000100	—.000100	
28,000	56,000	.001500	—.000050	....	....	
28,500	57,000	.001450	—.000050	....	....	
29,000	58,000	.001250	—.000200	....	....	
29,500	59,000	.001100	—.000150	....	....	
30,000	60,000	.001100	0.	—.000800	—.000400	
30,500	61,000	.001300	.000200	....	....	
31,000	62,000	.001400	.000100	....	....	
31,500	63,000	.001550	.000150	....	....	
32,000	64,000	.001800	.000250	....	....	
32,500	65,000	.002250	.000450	.000150	.000950	
33,000	66,000	.002750	.000500	....	....	
33,500	67,000	.003250	.000500	....	....	
34,000	68,000	.003850	.000600	....	....	
34,500	69,000	.004650	.000800	....	....	
35,000	70,000	.005150	.000500	.002800	.002650	
52,500	105,000	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds.. 54,000
Compression per inch under stress at elastic limit ....inch.. 0.001750
Ultimate strength per square inch of original section..pounds.. 105,000
Manner of failure ....triple flexure

No. 2062.

Marks, $^{32}\frac{\text{B}}{\text{T}_1}\text{B}_{30}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000350	.000150	0.	....	
4, 000	20, 000	.000400	.000050	0.	....	
5, 000	25, 000	.000650	.000250	0.	....	
6, 000	30, 000	.000750	.000100	0.	....	
7, 000	35, 000	.000950	.000200	0.	....	
8, 000	40, 000	.001150	.000200	0.	....	
9, 000	45, 000	.001300	.000150	0.	....	
9, 200	46, 000	.001350	.000050	....	....	
9, 400	47, 000	.001400	.000050	....	....	Elastic limit.
9, 600	48, 000	.001500	.000100	....	....	
9, 800	49, 000	.001650	.000150	....	....	
10, 000	50, 000	.002100	.000450	....	....	
10, 200	51, 700	.002400	.000300	....	....	
10, 400	52, 000	.002900	.000500	....	....	
10, 600	53, 000	.003400	.000500	....	....	
10, 800	54, 000	.003850	.000450	....	....	
11, 000	55, 000	.004550	.000700	....	....	
11, 200	56, 000	.005100	.000550	....	....	
11, 400	57, 000	.006150	.001050	....	....	
11, 600	58, 000	.006800	.000650	....	....	
11, 800	59, 000	.007600	.000800	....	....	
12, 000	60, 000	.008400	.000800	....	....	
12, 400	62, 000	.009950	.001550	....	....	
12, 800	64, 000	.011500	.001550	....	....	
13, 200	66, 000	.013500	.002000	....	....	
13, 600	68, 000	.015000	.001500	....	....	
14, 000	70, 000	.016850	.001850	....	....	
14, 400	72, 000	.019100	.002250	....	....	
14, 800	74, 000	.021200	.002100	....	....	
15, 200	76, 000	.023500	.002300	....	....	
15, 600	78, 000	.025700	.002200	....	....	
16, 000	80, 000	.028750	.003050	....	....	
16, 400	82, 000	.031750	.003000	....	....	
16, 800	84, 000	.034700	.002950	....	....	
17, 200	86, 000	.038500	.003800	....	....	
17, 600	88, 000	.043200	.004700	....	....	
18, 000	90, 000	.049000	.005800	....	....	
18, 400	92, 000	.055500	.006500	....	....	
18, 800	94, 000	.064800	.009300	....	....	
19, 200	96, 000	.0800	.0152	....	....	
19, 580	97, 900	.1100	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	97, 900
Elastic limit per square inch of original section	do...	47, 000
Elongation per inch after rupture	inch..	0. 1650
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.085
Reduction in area after rupture, per centum of original section		30. 7
Position of rupture		".46 from neck
Character of broken surface		granular; dull eccentric spot
Elongation of inch sections		".23*, ".10

No. 593.

Marks, $^{32}\frac{\mathrm{B}}{\mathrm{T}_2}\mathrm{B}_{30}$
Length, 3''.993.
Diameter, ''.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000550	.000150	0.	....	
12, 500	25, 000	.000700	.000150	0.	....	
15, 000	30, 000	.000850	.000150	0.	....	
17, 500	35, 000	.001000	.000150	0.	....	
20, 000	40, 000	.001150	.000150	0.	....	
20, 500	41, 000	.001200	.000050	....	....	
21, 000	42, 000	.001250	.000050	....	....	
21, 500	43, 000	.001250	0.	....	....	
22, 000	44, 000	.001250	0.	....	....	
22, 500	45, 000	.001300	.000050	.000050	.000050	Elastic limit.
23, 000	46, 000	.001500	.000200	....	....	
23, 500	47, 000	.001800	.000300	....	....	
24, 000	48, 000	.002150	.000350	....	....	
24, 500	49, 000	.002550	.000400	....	....	
25, 000	50, 000	.003000	.000450	.001400	.001350	
25, 500	51, 000	.003450	.000450	....	....	
26, 000	52, 000	.003800	.000350	....	....	
26, 500	53, 000	.004250	.000450	....	....	
27, 000	54, 000	.004700	.000450	....	....	
27, 500	55, 000	.005150	.000450	.003250	.001850	
50, 700	101, 400	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	45, 900
Compression per inch under stress at elastic limit	inch..	0. 001300
Ultimate strength per square inch of original section	pounds..	101, 400
Manner of failure		triple flexure

No. 2073.

Marks, $^{32}\underset{T}{B}\,B_{u}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000300	.000100	0.	....	
4,000	20,000	.000450	.000150	0.	....	
5,000	25,000	.000650	.000200	0.	....	
6,000	30,000	.000850	.000200	0.	....	
7,000	35,000	.001000	.000150	0.	....	
8,000	40,000	.001200	.000200	0.	....	
9,000	45,000	.001300	.000100	0.	....	
9,200	46,000	.001350	.000050	....	....	
9,400	47,000	.001450	.000100	....	....	
9,600	48,000	.001500	.000050	....	....	
9,800	49,000	.001550	.000050	....	....	Elastic limit.
10,000	50,000	.001650	.000100	.000100	.000100	
10,200	51,000	.002000	.000350	....	....	
10,400	52,000	.002450	.000450	....	....	
10,600	53,000	.002700	.000250	....	....	
10,800	54,000	.003100	.000400	....	....	
11,000	55,000	.003550	.000450	....	....	
11,200	56,000	.004100	.000550	....	....	
11,400	57,000	.004650	.000550	....	....	
11,600	58,000	.005300	.000650	....	....	
11,800	59,000	.005950	.000650	....	....	
12,000	60,000	.006850	.000900	....	....	
12,400	62,000	.008250	.001400	....	....	
12,800	64,000	.010100	.001850	....	....	
13,200	66,000	.011650	.001550	....	....	
13,600	68,000	.012900	.001250	....	....	
14,000	70,000	.014750	.001850	....	....	
14,400	72,000	.016550	.001800	....	....	
14,800	74,000	.018100	.001550	....	....	
15,200	76,000	.020000	.001900	....	....	
15,600	78,000	.022550	.002550	....	....	
16,000	80,000	.024550	.002000	....	....	
16,400	82,000	.027100	.002550	....	....	
16,800	84,000	.029650	.002550	....	....	
17,200	86,000	.032500	.002850	....	....	
17,600	88,000	.035600	.003100	....	....	
18,000	90,000	.039550	.003950	....	....	
18,400	92,000	.043750	.004200	....	....	
18,800	94,000	.048500	.004750	....	....	
19,200	96,000	.055000	.006500	....	....	
19,600	98,000	.063250	.008250	....	....	
20,000	100,000	.0850	.021750	....	....	
20,310	101,550	.1100	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	101,550
Elastic limit per square inch of original section	do...	49,000
Elongation per inch after rupture	inch..	0.1600
Elongation per inch under strain at elastic limit	do...	.001550
Reduction in diameter at point of rupture	do...	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		".45 from neck
Character of broken surface		granular; dull eccentric spot
Elongation of inch sections		".23*, ".09

No. 605.

Marks, $\overset{32\ B\ B_{1}}{T_{2}}$
Length, 3″.995.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000450	.000150	0.	....	
10,000	20,000	.000600	.000150	0.	....	
12,500	25,000	.000750	.000150	0.	....	
15,000	30,000	.000900	.000150	0.	....	
17,500	35,000	.001100	.000200	0.	....	
20,000	40,000	.001250	.000150	0.	....	
22,500	45,000	.001500	.000250	0.	....	
23,000	46,000	.001500	0.	....	....	
23,500	47,000	.001550	.000050	....	....	
24,000	48,000	.001550	0.	....	....	
24,500	49,000	.001600	.000050	....	....	
25,000	50,000	.001700	.000100	.000100	.000100	Elastic limit.
25,500	51,000	.001900	.000200	....	....	
26,000	52,000	.002200	.000300	....	....	
26,500	53,000	.002550	.000350	....	....	
27,000	54,000	.003050	.000500	....	....	
27,500	55,000	.003600	.000550	.001850	.001750	
28,000	56,000	.004350	.000750	....	....	
28,500	57,000	.005300	.000950	....	....	
29,000	58,000	.006300	.001000	....	....	
29,500	59,000	.007150	.000850	....	....	
30,000	60,000	.008000	.000850	.005850	.004000	
53,900	107,800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	50,000
Compression per inch under stress at elastic limit	inch..	0.001700
Ultimate strength per square inch of original section	pounds..	107,800
Manner of failure		triple flexure

No. 2063.

Marks, $^{32\,\mathrm{B}\,\mathrm{Bn}}_{\quad\mathrm{T_1}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000300	.000200	0.	....	
3, 000	15, 000	.000400	.000100	0.	....	
4, 000	20, 000	.000550	.000150	0.	....	
5, 000	25, 000	.000650	.000100	0.	....	
6, 000	30, 000	.000900	.000250	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001250	.000200	0.	....	
9, 000	45, 000	.001450	.000200	0.	....	
9, 200	46, 000	.001450	0.	....	....	
9, 400	47, 000	.001500	.000050	....	....	
9, 600	48, 000	.001550	.000050	....	....	
9, 800	49, 000	.001600	.000050	....	....	
10, 000	50, 000	.001700	.000100	....	....	Elastic limit.
10, 200	51, 000	.001900	.000200	....	....	
10, 400	52, 000	.002250	.000350	....	....	
10, 600	53, 000	.002550	.000300	....	....	
10, 800	54, 000	.003250	.000700	....	....	
11, 000	55, 000	.004100	.000850	....	....	
11, 200	56, 000	.004700	.000600	....	....	
11, 400	57, 000	.005400	.000700	....	....	
11, 600	58, 000	.006150	.000750	....	....	
11, 800	59, 000	.006950	.000800	....	....	
12, 000	60, 000	.007600	.006500	....	....	
12, 400	62, 000	.009250	.001650	....	....	
12, 800	64, 000	.010650	.001400	....	....	
13, 200	66, 000	.012450	.001800	....	....	
13, 600	68, 000	.014100	.001650	....	....	
14, 000	70, 000	.015800	.001700	....	....	
14, 400	72, 000	.017700	.001900	....	....	
14, 800	74, 000	.019600	.001900	....	....	
15, 200	76, 000	.021700	.002100	....	....	
15, 600	78, 000	.023900	.002200	....	....	
16, 000	80, 000	.026500	.002600	....	....	
16, 400	82, 000	.029050	.002550	....	....	
16, 800	84, 000	.031850	.002800	....	....	
17, 200	86, 000	.035150	.003300	....	....	
17, 600	88, 000	038600	.003450	....	....	
18, 000	90, 000	.043250	.004650	....	....	
18, 400	92, 000	.048750	.005500	....	....	
18, 800	94, 000	.054750	.006000	....	....	
19, 200	96, 000	.065750	.001100	....	....	
19, 600	98, 000	.0800	.014250	....	....	
19, 870	99, 350	.1150	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	99, 350
Elastic limit per square inch of original section	do...	50, 000
Elongation per inch after rupture	inch..	0. 1800
Elongation per inch under strain at elastic limit	do...	001700
Reduction in diameter at point of rupture	do...	.095
Reduction in area after rupture, per centum of original section		34. 0
Position of rupture		″.55 from neck
Character of broken surface		granular; dull center
Elongation of inch sections		″.26*, ″.10

No. 594.

Marks, $^{32}\frac{B}{T_2}{}^{B_{22}}$
Length, 3''.996.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000500	.000100	0.	....	
12, 500	25, 000	.000650	.000150	0.	....	
15, 000	30, 000	.000850	.000200	0.	....	
17, 500	35, 000	.001000	.000150	—. 000050	— 000050	
20, 000	40, 000	.001150	.002150	— 000050	0.	
22, 500	45, 000	.001300	.000150	—. 000050	0.	
23, 000	46, 000	.001300	0.	....	....	
23, 500	47, 000	.001350	.000050	....	....	
24, 000	48, 000	.001350	0.	....	....	
24, 500	49, 000	.001400	.000050	....	....	
25, 000	50, 000	.001450	.000050	— 000100	—. 000050	
25, 50.)	51, 000	.001450	0.	....	....	
26, 000	52, 000	.001500	.000050	....	....	
26, 500	53, 000	.001500	0.	....	....	Elastic limit.
27, 000	54, 000	.001650	.000150	....	....	
27, 500	55, 000	.001950	.000300	.000350	.000450	
28, 000	56, 000	.002250	.000300	....	....	
28, 500	57, 000	.002500	.000250	....	....	
29, 000	58, 000	.002950	.000450	....	....	
29, 500	59, 000	.003300	.000350	....	....	
30, 000	60, 000	.003800	.000500	.002000	.001650	
30, 500	61, 000	.004450	.000650	....	....	
31, 000	62, 000	.004900	.000450	....	....	
31, 500	63, 000	.005500	.000600	....	....	
32, 000	64, 000	.006100	000600	....	....	
32, 500	65, 000	.006800	.000700	004650	.002650	
53, 500	107, 000	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	53, 000
Compression per inch under stress at elastic limit	inch..	0. 001500
Ultimate strength per square inch of original section	pounds.	107, 000
Manner of failure		triple flexure

No. 2074.

Marks $^{32}\overset{B\ B_{22}}{T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000400	.000200	0.	....	
4, 000	20, 000	.000600	.000200	0.	....	
5, 000	25, 000	.000800	.000200	0.	....	
6, 000	30, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001050	.000100	0.	....	
8, 000	40, 000	.001300	.000250	0.	....	
9, 000	45, 000	.001550	.000250	0.	....	
9, 200	46, 000	.001550	0.	....	....	
9, 400	47, 000	.001650	.000100	....	....	Elastic limit.
9, 600	48, 000	.001850	.000200	....	....	
9, 800	49, 000	.002150	.000300	....	....	
10, 000	50, 000	.002550	.000400	....	....	
10, 200	51, 000	.003050	.000500	....	....	
10, 400	52, 000	.003500	.000450	....	....	
10, 600	53, 000	.004050	.000550	....	....	
10, 800	54, 000	.004550	.000500	....	....	
11, 000	55, 000	.005050	.000500	....	....	
11, 200	56, 000	.005750	.000700	....	....	
11, 400	57, 000	.006650	.000900	....	....	
11, 600	58, 000	.007300	.000650	....	....	
11, 800	59, 000	.007850	.000550	....	....	
12, 000	60, 000	.008700	.000850	....	....	
12, 400	62, 000	.010150	.001450	....	....	
12, 800	64, 000	.011650	.001500	....	....	
13, 200	66, 000	.013250	.001600	....	....	
13, 600	68, 000	.015150	.001900	....	....	
14, 000	70, 000	.017000	.001850	....	....	
14, 400	72, 000	.018750	.001750	....	....	
14, 800	74, 000	.020650	.001900	....	....	
15, 200	76, 000	.023050	.002400	....	....	
15, 600	78, 000	.025600	.002550	....	....	
16, 000	80, 000	.028550	.002950	....	....	
16, 400	82, 000	.031000	.002450	....	....	
16, 800	84, 000	.033750	.002750	....	....	
17, 200	86, 000	.037000	.003250	....	....	
17, 600	88, 000	.040600	.003600	....	....	
18, 000	90, 000	.045150	.004550	....	....	
18, 400	92, 000	.051050	.005900	....	....	
18, 800	94, 000	.057650	.006600	....	....	
19, 200	96, 000	.0700	.012350	....	....	
19, 600	98, 000	.0900	.0200	....	....	
19, 830	99, 150	.1150	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	99, 150
Elastic limit per square inch of original section	do...	47, 000
Elongation per inch after rupture	inch..	0. 1550
Elongation per inch under strain at elastic limit	do...	.001650
Reduction in diameter at point of rupture	do ..	.085
Reduction in area after rupture, per centum of original section		30. 7
Position of rupture		½ inch from neck
Character of broken surface		granular; dull center
Elongation of inch sections		″.22*, ″.09

No. 606.

Marks, $\overset{32\text{ B B}_{23}}{\text{T}_3}$
Length, 3''.995.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000200	.000100	0.	....	
7, 500	15, 000	.000300	.000100	0.	....	
10, 000	20, 000	.000400	.000100	0.	....	
12, 500	25, 000	.000600	.000200	0.	....	
15, 000	30, 000	.000700	.000100	0.	....	
17, 500	35, 000	.000850	.000150	0.	....	
20, 000	40, 000	.001000	.000150	—. 000050	—. 000050	
20, 500	41, 000	.001000	0.	....	....	
21, 000	42, 000	.001000	0.	....	....	
21, 500	43, 000	.001050	.000050	....	....	
22, 000	44, 000	.001100	.000050	....	....	
22, 500	45, 000	.001100	0.	—. 000100	—. 000050	
23, 000	46, 000	.001100	0.	....	....	
23, 500	47, 000	.001050	.000050	....	....	Elastic limit.
24, 000	48, 000	.002150	.001100	....	....	
24, 500	49, 000	.003000	.000850	....	....	
25, 000	50, 000	.003950	.000950	....	....	
51, 800	103, 600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section............pounds.. 47, 000
Compression per inch under stress at elastic limit............inch.. 0. 001050
Ultimate strength per square inch of original section............pounds.. 103, 600
Manner of failure............triple flexure

No. 2068.

Marks, $^{32}\frac{\mathrm{B}}{\mathrm{T}_1}\mathrm{B}_{\mathrm{M}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000450	.000200	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001200	.000250	0.	....	
8,000	40,000	.001300	.000100	0.	....	
9,000	45,000	.001500	.000200	0.	....	
9,200	46,000	.001550	.000050	....	....	
9,400	47,000	.001600	.000050	....	....	
9,600	48,000	.001650	.000050	....	....	
9,800	49,000	.001700	.000050	....	....	Elastic limit.
10,000	50,000	.002050	.000350	....	....	
10,200	51,000	.002400	.000350	....	....	
10,400	52,000	.002900	.000500	....	....	
10,600	53,000	.003400	.000500	....	....	
10,800	54,000	.003900	.000500	....	....	
11,000	55,000	.004500	.000600	....	....	
11,200	56,000	.005350	.000850	....	....	
11,400	57,000	.006000	.000650	....	....	
11,600	58,000	.007100	.001100	....	....	
11,800	59,000	.007700	.000600	....	....	
12,000	60,000	.008600	.000900	....	....	
12,400	62,000	.010000	.001400	....	....	
12,800	64,000	.011250	.001250	....	....	
13,200	66,000	.013000	.001750	....	....	
13,600	68,000	.014800	.001800	....	....	
14,000	70,000	.016450	.001650	....	....	
14,400	72,000	.018400	.001950	....	....	
14,800	74,000	.020350	.001950	....	....	
15,200	76,000	.022650	.002300	....	....	
15,600	78,000	.024850	.002200	....	....	
16,000	80,000	.027700	.002850	....	....	
16,400	82,000	.030650	.002950	....	....	
16,800	84,000	.033500	.002850	....	....	
17,200	86,000	.037250	.003700	....	....	
17,600	88,000	.041050	.003850	....	....	
18,000	90,000	.047000	.005950	....	....	
18,400	92,000	.052250	.005250	....	....	
18,800	94,000	.060500	.008250	....	....	
19,200	96,000	.0700	.0095	....	....	
19,600	98,000	.0950	.0250	....	....	
19,740	98,700	.1350	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98,700
Elastic limit per square inch of original section	do...	49,000
Elongation per inch after rupture	inch..	0.2050
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	0.85
Reduction in area after rupture, per centum of original section		30.7
Position of rupture		″.4 from neck
Character of broken surface		granular; dull center
Elongation of inch sections		″.24*, ″.17

No. 600.

Marks, $^{32}\underset{\mathrm{T}_3}{\mathrm{B}}\mathrm{B}_{34}$
Length, 3''.998.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	. 000150	. 000150	0.	....	
5, 000	10, 000	. 000300	. 000150	0.	....	
7, 500	15, 000	. 000450	. 000150	0.	....	
10, 000	20, 000	. 000600	. 000150	0.	....	
12, 500	25, 000	. 000750	. 000150	0.	....	
15, 000	30, 000	. 000950	. 000200	0.	....	
17, 500	35, 000	. 001150	. 000200	0.	....	
20, 000	40, 000	. 001300	. 000150	. 000050	. 000050	
20, 500	41, 000	. 001350	. 000050	....	....	
21, 000	42, 000	. 001400	. 000050	....	....	
21, 500	43, 000	. 001450	. 000050	....	....	
22, 000	44, 000	. 001500	. 000050	....	....	
22, 500	45, 000	. 001500	. 0	. 000100	. 000050	
23, 000	46, 000	. 001500	. 0	....	....	
23, 500	47, 000	. 001550	. 000050	....	....	
24, 000	48, 000	. 001600	. 000050	....	....	
24, 500	49, 000	. 001650	. 000050	....	....	
25, 000	50, 000	. 001650	. 0	. 000100	. 0	Elastic limit.
25, 500	51, 000	. 001750	. 000100	....	....	
26, 000	52, 000	. 002000	. 000250	....	....	
26, 500	53, 000	. 002600	. 000600	....	....	
27, 000	54, 000	. 003300	. 000700	....	....	
27, 500	55, 000	. 003850	. 000550	. 002100	. 002000	
28, 000	56, 000	. 004500	. 000650	....	....	
28, 500	57, 000	. 005250	. 000750	....	....	
29, 000	58, 000	. 006000	. 000750	....	....	
29, 500	59, 000	. 006750	. 000750	....	....	
30, 000	60, 000	. 007750	. 001000	. 005550	. 003450	
52, 700	105, 400	....	....	....	....	Ultimate strength

General summary.

Elastic limit per square inch of original section....................................pounds.. 50, 000
Compression per inch under stress at elastic limit....................................inch.. 0. 001650
Ultimate strength per square inch of original section....................................pounds.. 105, 400
Manner of failure....................................triple flexure

No. 2045.

Marks, $32\,\frac{B}{T_1}B_{26}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000300	.000100	0.	....	
4, 000	20, 000	.000450	.000150	0.	....	
5, 000	25, 000	.000650	.000200	0.	....	
6, 000	30, 000	.000800	.000150	0.	....	
7, 000	35, 000	.000950	.000150	0.	....	
8, 000	40, 000	.001100	.000150	0.	....	
8, 800	44, 000	.001150	.000050	....	....	Elastic limit.
9, 000	45, 000	.001550	.000400	.000150	.000150	
9, 200	46, 000	.002300	.000750	....	....	
9, 400	47, 000	.003150	.000850	....	....	
9, 600	48, 000	.003600	.000450	....	....	
9, 800	49, 000	.004150	.000550	....	....	
10, 000	50, 000	.004900	.000750	.003150	.003000	
10, 200	51, 000	.005500	.000600	....	....	
10, 400	52, 000	.006500	.001000	....	....	
10, 600	53, 000	.007100	.000600	....	....	
10, 800	54, 000	.007600	.000500	....	....	
11, 000	55, 000	.008400	.000800	....	....	
11, 200	56, 000	.009200	.000800	....	....	
11, 400	57, 000	.009900	.000700	....	....	
11, 600	58, 000	.010650	.000750	....	....	
11, 800	59, 000	.011550	.000900	....	....	
12, 000	60, 000	.012500	.000950	....	....	
12, 400	62, 000	.014200	.001700	....	....	
12, 800	64, 000	.015650	.001450	....	....	
13, 200	66, 000	.017450	.001800	....	....	
13, 600	68, 000	.019500	.002050	....	....	
14, 000	70, 000	.021500	.002000	....	....	
14, 400	72, 000	.024000	.002500	....	....	
14, 800	74, 000	.026100	.002100	....	....	
15, 200	76, 000	.028850	.002750	....	....	
15, 600	78, 000	.031450	.002600	....	....	
16, 000	80, 000	.034550	.003100	....	....	
16, 400	82, 000	.038200	.003650	....	....	
16, 800	84, 000	.042500	.004300	....	....	
17, 200	86, 000	.046850	.004350	....	....	
17, 600	88, 000	.052750	.005900	....	....	
18, 000	90, 000	.060500	.007750	....	....	
18, 400	92, 000	.0650	.0045	....	....	
18, 800	94, 000	.0850	.0200	....	....	
19, 120	95, 600	.1300	.0450	....	....	Tensile strength.

General summary.

Specific gravity		7. 8579
Tensile strength per square inch of original section	pounds	95, 600
Elastic limit per square inch of original section	do	44, 000
Elongation per inch after rupture	inch	0. 1900
Elongation per inch under strain at elastic limit	do	.001150
Reduction in diameter at point of rupture	do	.084
Reduction in area after rupture, per centum of original section		30. 7
Position of rupture		$\frac{3}{8}$ inch from middle of stem
Character of broken surface		granular; dull center
Elongation of inch sections		″.25*, ″.13

No. 582.

Marks, $^{32\,\mathrm{B}\,\mathrm{B}_{34}}_{\mathrm{T}_3}$
Length, 3''.996.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000350	.000050	0.	....	
10,000	20,000	.000500	.000150	0.	....	
12,500	25,000	.000500	0.	−.000100	−.000100	
15,000	30,000	.000650	.000150	−.000100	0.	
17,500	35,000	.000750	.000100	−.000150	−.000050	
20,000	40,000	.000850	.000100	−.000200	−.000050	
20,500	41,000	.000850	0.	....	....	
21,000	42,000	.000900	.000050	....	....	
21,500	43,000	.000900	0.	....	....	
22,000	44,000	.000900	0.	....	....	
22,500	45,000	.000900	0.	−.000250	−.000050	
23,000	46,000	.000800	.000100	....	....	
23,500	47,000	.000850	.000050	....	....	Elastic limit.
24,000	48,000	.001000	.000150	....	....	
24,500	49,000	.001250	.000250	....	....	
25,000	50,000	001750	.000500	.000250	.000500	
25,500	51,000	.002050	.000300	....	....	
26,000	52,000	.002650	.000600	....	....	
26,500	53,000	.003300	.000650	....	....	
27,000	54,000	.004000	.000700	....	....	
27,500	55,000	.004600	.000600	.002800	.002550	
28,000	56,000	.005300	.000700	....	....	
28,500	57,000	.005850	.000550	....	....	
29,000	58,000	.006800	.000950	....	....	
29,500	59,000	.007600	.000800	....	....	
30,000	60,000	.008300	.000700	.006050	.003250	
51,500	103,000	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section..pounds.. 47,000
Compression per inch under stress at elastic limit..inch.. 0.000850
Ultimate strength per square inch of original section..pounds.. 103,000
Manner of failure..triple flexur

[Additional specimens.]

No. 2395.

Marks, $^{32}\frac{\text{B}\ \text{B}_{28}}{\text{T}_{3}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000500	.000200	0.	....	
4, 000	20, 000	.000650	.000150	0.	....	
5, 000	25, 000	.000800	.000150	0.	....	
6, 000	30, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001050	.000100	....	....	
8, 000	40, 000	.001200	.000150	....	....	
9, 000	45, 000	.001500	.000300	....	....	
10, 000	50, 000	.001650	.000150	....	....	
11, 000	55, 000	.001800	.000150	....	....	
11, 200	56, 000	.001850	.000050	....	....	
11, 400	57, 000	.001900	.000050	....	....	
11, 600	58, 000	.001900	0.	....	....	
11, 800	59, 000	.001950	.000050	....	....	
12, 000	60, 000	.002000	.000050	....	....	Elastic limit.
12, 200	61, 000	.004700	.002700	....	....	
12, 400	62, 000	.006300	.001600	....	....	
12, 600	63, 000	.007200	.000900	....	....	
12, 800	64, 000	.008300	.001100	....	....	
13, 000	65, 000	.009350	.001050	....	....	
13, 200	66, 000	.010250	.000900	....	....	
13, 400	67, 000	.011250	.001000	....	....	
13, 600	68, 000	.011850	.000600	....	....	
13, 800	69, 000	.012750	.000900	....	....	
14, 000	70, 000	.014000	.001250	....	....	
14, 400	72, 000	.016000	.002000	....	....	
14, 800	74, 000	.017750	.001750	....	....	
15, 200	76, 000	.019750	.002000	....	....	
15, 600	78, 000	.022200	.002450	....	....	
16, 000	80, 000	.024750	.002550	....	....	
16, 400	82, 000	.027500	.002750	....	....	
16, 800	84, 000	.030250	.002750	....	....	
17, 200	86, 000	.033650	.003400	....	....	
17, 600	88, 000	.037500	.003850	....	....	
18, 000	90, 000	.042000	.004500	....	....	
18, 400	92, 000	.047100	.005100	....	....	
18, 800	94, 000	.0550	.0079	....	....	
19, 200	96, 000	.0600	.0050	....	....	
19, 600	98, 000	.0750	.0050	....	....	
19, 990	99, 950	.1200	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	99, 950
Elastic limit per square inch of original section	do...	00. 000
Elongation per inch after rupture	inch..	0. 2250
Elongation per inch under strain at elastic limit	do...	.002000
Reduction in diameter at point of rupture	do...	.125
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		1″.2 from neck
Character of broken surface		silky
Elongation of inch sections		″.25*, ″.20

No. 582.

Marks, $^{32\,\text{B D}_{\text{s}}}_{\text{T}_3}$
Length, 3''.996.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000350	.000050	0.	....	
10,000	20,000	.000500	.000150	0.	....	
12,500	25,000	.000500	0.	—.000100	—.000100	
15,000	30,000	.000650	.000150	—.000100	0.	
17,500	35,000	.000750	.000100	—.000150	—.000050	
20,000	40,000	.000850	.000100	—.000200	—.000050	
20,500	41,000	.000850	0.	....	....	
21,000	42,000	.000900	.000050	....	....	
21,500	43,000	.000900	0.	....	....	
22,000	44,000	.000900	0.	....	....	
22,500	45,000	.000900	0.	—.000250	—.000050	
23,000	46,000	.000800	.000100	....	....	
23,500	47,000	.000850	.000050	....	....	Elastic limit.
24,000	48,000	.001000	.000150	....	....	
24,500	49,000	.001250	.000250	....	....	
25,000	50,000	001750	.000500	.000250	.000500	
25,500	51,000	.002050	.000300	....	....	
26,000	52,000	.002650	.000600	....	....	
26,500	53,000	.003300	.000650	....	....	
27,000	54,000	.004000	.000700	....	....	
27,500	55,000	.004600	.000600	.002800	.002550	
28,000	56,000	.005300	.000700	....	....	
28,500	57,000	.005850	.000550	....	....	
29,000	58,000	.006800	.000950	....	....	
29,500	59,000	.007600	.000800	....	....	
30,000	60,000	.008300	.000700	.006050	.003250	
51,500	103,000	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section..pounds.. 47,000
Compression per inch under stress at elastic limit ....inch.. 0.000850
Ultimate strength per square inch of original section ....pounds.. 103,000
Manner of failure ....triple flexur

[Additional specimens.]

No. 2395.

Marks, $^{32}\underset{T_{3}}{\mathrm{B}}\,\mathrm{B}_{26}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000500	.000200	0.	....	
4, 000	20, 000	.000650	.000150	0.	....	
5, 000	25, 000	.000800	.000150	0.	....	
6, 000	30, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001050	.000100	....	....	
8, 000	40, 000	.001200	.000150	....	....	
9, 000	45, 000	.001500	.000300	....	....	
10, 000	50, 000	.001650	.000150	....	....	
11, 000	55, 000	.001800	.000150	....	....	
11, 200	56, 000	.001850	.000050	....	....	
11, 400	57, 000	.001900	.000050	....	....	
11, 600	58, 000	.001900	0.	....	....	
11, 800	59, 000	.001950	.000050	....	....	
12, 000	60, 000	.002000	.000050	....	....	Elastic limit.
12, 200	61, 000	.004700	.002700	....	....	
12, 400	62, 000	.006300	.001600	....	....	
12, 600	63, 000	.007200	.000900	....	....	
12, 800	64, 000	.008300	.001100	....	....	
13, 000	65, 000	.009350	.001050	....	....	
13, 200	66, 000	.010250	.000900	....	....	
13, 400	67, 000	.011250	.001000	....	....	
13, 600	68, 000	.011850	.000600	....	....	
13, 800	69, 000	.012750	.000900	....	....	
14, 000	70, 000	.014000	.001250	....	....	
14, 400	72, 000	.016000	.002000	....	....	
14, 800	74, 000	.017750	.001750	....	....	
15, 200	76, 000	.019750	.002000	....	....	
15, 600	78, 000	.022200	.002450	....	....	
16, 000	80, 000	.024750	.002550	....	....	
16, 400	82, 000	.027500	.002750	....	....	
16, 800	84, 000	.030250	.002750	....	....	
17, 200	86, 000	.033650	.003400	....	....	
17, 600	88, 000	.037500	.003850	....	....	
18, 000	90, 000	.042000	.004500	....	....	
18, 400	92, 000	.047100	.005100	....	....	
18, 800	94, 000	.0550	.0079	....	....	
19, 200	96, 000	.0600	.0050	....	....	
19, 600	98, 000	.0750	.0050	....	....	
19, 990	99, 950	.1200	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	99, 950
Elastic limit per square inch of original section	do...	60. 000
Elongation per inch after rupture	inch..	0. 2250
Elongation per inch under strain at elastic limit	do...	.002000
Reduction in diameter at point of rupture	do...	. 125
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		1″.2 from neck
Character of broken surface		silky
Elongation of inch sections		″.25*, ″.20

No. 646.

Marks, $^{32}\frac{B\,B_{26}}{T_4}$
Length, 4″.004.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000150	.600150	0.		
5, 000	10, 000	.000300	.000150	0.		
7, 500	15, 000	.000450	.000150	0.		
10, 000	20, 000	.000650	.000200	0.		
12, 500	25, 000	.000800	.000150	0.		
15, 000	30, 000	.000950	.000150	0.		
17, 500	35, 000	.001100	.000150	0.		
20, 000	40, 000	.001300	.000200	0.		
22, 500	45, 000	.001450	.000150	0.		
25, 000	50, 000	.001600	.000150	0.		
25, 500	51, 000	.001650	.000050			
26, 000	52, 000	.001700	.000050			
26, 500	53, 000	.001700	0.			
27, 000	54, 000	.001750	.000050			
27, 500	55, 000	.001800	.000050			
28, 000	56, 000	.001800	0.			
28, 500	57, 000	.001850	.000050			
29, 000	58, 000	.001850	0.			
29, 500	59, 000	.001900	.000050			
30, 000	60, 000	.001900	0.			
30, 500	61, 000	.001950	.000050			Elastic limit.
31, 000	62, 000	.003500	.001550			
31, 500	63, 000	.003800	.000300			
32, 000	64, 000	.004050	.000250			
32, 500	65, 000	.004350	.000200			
33, 000	66, 000	.004750	.000400			
53, 160	106, 320					Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	61, 000
Compression per inch under stress at elastic limit	inch..	0. 001950
Ultimate strength per square inch of original section	pounds..	106, 320
Manner of failure		triple flexure

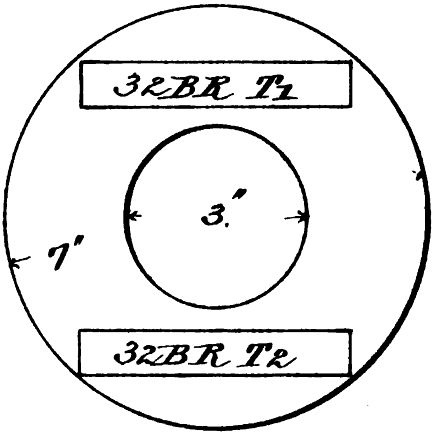
SPECIMENS FROM STEEL BASE RINGS

FOR

3".2 STEEL B. L. RIFLES.

Base Ring 3.2" Rifle

General drawing showing positions from whence specimens were taken.



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SPECIMENS FROM STEEL BASE RINGS FOR 3".2 STEEL B. L. RIFLES.

No. 1030.

Marks, $^{32}\frac{B\,R_1}{T_1}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000450	.000150	0.	....	
4, 000	20, 000	.000650	.000200	0.	....	
5, 000	25, 000	.000800	.000150	0.	....	
6, 000	30, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001150	.000200	.000050	.000050	
8, 000	40, 000	.001300	.000150	.000050	0.	
9, 000	45, 000	.001450	.000150	.000050	0.	
10, 000	50, 000	.001650	.000200	.000050	0.	
10, 200	51, 000	.001750	.000100	....	....	
10, 400	52, 000	.001850	.000100	....	....	Elastic limit.
10, 600	53, 000	.001900 .002050	.000050 .000150	....	....	
10, 800	54, 000	.002350	.000300	....	....	
11, 000	55, 000	.003000	.000650	.001050	.001000	
11, 200	56, 000	.003450	.000450	....	....	
11, 400	57, 000	.004000	.000550	....	....	
11, 600	58, 000	.004500	.000500	....	....	
11, 800	59, 000	.005250	.000750	....	....	
12, 000	60, 000	.006100	.000850	.003850	.002800	
12, 400	62, 000	.007150	.001050	....	....	
12, 800	64, 000	.008650	.001500	....	....	
13, 200	66, 000	.010350	.001700	....	....	
13, 600	68, 000	.011900	.001550	....	....	
14, 000	70, 000	.013250	.001350	....	....	
14, 400	72, 000	.015000	.001750	....	....	
14, 800	74, 000	.016600	.001600	....	....	
15, 200	76, 000	.018600	.002000	....	....	
15, 600	78, 000	.020600	.002000	....	....	
16, 000	80, 000	.022500	.001900	....	....	
16, 400	82, 000	.025000	.002500	....	....	
16, 800	84, 000	.027200	.002200	....	....	
17, 200	86, 000	.030000	.002800	....	....	
17, 600	88, 000	.032900	.002900	....	....	
18, 000	90, 000	.036050	.003150	....	....	
18, 400	92, 000	.039550	.003500	....	....	
18, 800	94, 000	.043000	.003450	....	....	
19, 200	96, 000	.048500	.005500	....	....	
19, 600	98, 000	.056250	.007750	....	....	
20, 000	100, 000	.0650	.008750	....	....	
20, 400	102, 000	.0800	.0150	....	....	
20, 710	103, 550	.1300	.0500	....	....	Tensile strength.

General summary.

Specific gravity		7. 8678
Tensile strength per square inch of original section	pounds..	103, 550
Elastic limit per square inch of original section	do...	52, 000
Elongation per inch after rupture	inch..	0 1900
Elongation per inch under strain at elastic limit	do...	.001850
Reduction in diameter at point of rupture	do...	.085
Reduction in area after rupture, per centum of original section		30. 7
Position of rupture		".7 from neck
Character of broken surface		granular; dull center
Elongation of inch sections		".26*, ".12

No. 534.

Marks, $^{32}\underset{\text{T}_2}{\text{B}}\,\text{R}_1$
Length, 4″.48.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000050	.000050	0.	....	
5,000	10,000	.000200	.000150	0.	....	
7,500	15,000	.000350	.000150	0.	....	
10,000	20,000	.000500	.000150	0.	....	
12,500	25,000	.000650	.000150	0.	....	
15,000	30,000	.000800	.000150	0.	....	
17,500	35,000	.001000	.000200	0.	....	
20,000	40,000	.001100	.000100	0.	....	
22,500	45,000	.001300	.000200	0.	....	
24,500	49,000	.001400	.000100	....	....	Elastic limit.
25,000	50,000	.001350	— .000050	— .000100	— .000100	
25,500	51,000	.001250	— .000100	....	....	
26,000	52,000	.001100	— .000150	....	....	
26,500	53,000	.000950	— .000150	....	....	
27,000	54,000	.000800	— .000150	....	....	
27,500	55,000	.000700	— .000100	— .000950	— .000850	
28,000	56,000	.000550	— .000150	....	....	
28,500	57,000	.000500	— .000050	....	....	
29,000	58,000	.000450	— .000450	....	....	
29,500	59,000	.000400	— .000050	....	....	
30,000	60,000	.000400	0.	— .001350	— .000400	
50,550	101,100	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section....................pounds.. 49,000
Compression per inch under stress at elastic limit....................inch.. 0.001400
Ultimate strength per square inch of original section....................pounds.. 101,100
Manner of failure....................triple flexure

NOTE.—This specimen deflected convex on the side carrying the micrometer, thus causing an apparent elongation along that line.

No. 1031.

Marks, $^{32}\frac{B}{T_1}{}^{R_8}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000800	.000050	0.	....	
7,000	35,000	.000950	.000150	0.	....	
8,000	40,000	.001100	.000150	0.	...	
9,000	45,000	.001300	.000200	.000050	.000050	
10,000	50,000	.001550	.000250	.000100	.000050	
10,200	51,000	.001600	.000050	..	....	
10,400	52,000	.001650	.000050	....	....	
10,600	53,000	.001700	.000050	....	....	
10,800	54,000	.001750	.000050		....	
11,000	55,000	.001800	.000050	.000100	0.	
11,200	56,000	.001800	0.	.....	....	
11,400	57,000	.001900	.000100	....	....	Elastic limit.
11,600	58,000	.002100	.000200	....	....	
11,800	59,000	.002350	.000250	.	....	
12,000	60,000	.002750	.000400	.000750	.000650	
12,400	62,000	.003250	.000500	....	....	
12,800	64,000	.004250	.001000	....	....	
13,200	66,000	.005800	.001550	....	....	
13,600	68,000	.007400	.001600	....	....	
14,000	70,000	.008650	.001250	....	....	
14,400	72,000	.009450	.000800	....	....	
14,800	74,000	.011300	.001850	....	....	
15,200	76,000	.012800	.001500	....	....	
15,600	78,000	.014250	.001450	....	....	
16,000	80,000	.015700	.001450	....	....	
16,400	82,000	.017300	.001600	....	....	
16,800	84,000	.019250	.001950	....	....	
17,200	86,000	.021200	.001950	....	....	
17,600	88,000	.023200	.002000	....	....	
18,000	90,000	.025500	.002300	....	....	
18,400	92,000	.027850	.002350	....	....	
18,800	94,000	.030000	.002150	....	....	
19,200	96,000	.033000	.003000	....	....	
19,600	98,000	.036150	.003150	....	....	
20,000	100,000	.039550	.003400	....	....	
20,400	102,000	.0450	.005450	....	....	
20,800	104,000	.0500	.0050	....	....	
21,200	106,000	.0550	.0050	....	....	
21,600	108,000	.0650	.0100	....	....	
22,000	110,000	.0800	.0150	....	....	
22,100	110,500	.1100	.0300	....	....	Tensile strength.

General summary.

Specific gravity	7.8607
Tensile strength per square inch of original section .... pounds	110,500
Elastic limit per square inch of original section .... do	57,000
Elongation per inch after rupture .... inch	0.1500
Elongation per inch under strain at elastic limit .... do	.001900
Reduction in diameter at point of rupture .... do	.065
Reduction in area after rupture, per centum of original section	23.9
Position of rupture	″.55 from neck
Character of broken surface	granular; dull center
Elongation of inch sections	″.20, ″.10

No. 535.

Marks, $^{32}\,\mathrm{B}\,^{\mathrm{R_6}}_{\mathrm{T_7}}$
Length 4".49.
Diameter, ".798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000150	.000150	0.	....	
5, 000	10, 000	.000300	.000150	0.	....	
7, 500	15, 000	.000500	.000200	0.	....	
10, 000	20, 000	.000600	.000100	0.	....	
12, 500	25, 000	.000750	.000150	0.	....	
15, 000	30, 000	.000900	.000150	0.	....	
17, 500	35, 000	.001100	.000200	0.	....	
20, 000	40, 000	.001250	.000150	0.	....	
22, 500	45, 000	.001400	.000150	0.	....	
25, 000	50, 000	.001500	.000100	0.	....	
25, 500	51, 000	.001550	.000050	....	....	
26, 000	52, 000	.001600	.000050	....	....	
26, 500	53, 000	.001600	0.	....	....	
27, 000	54, 000	.001600	.000050	....	....	
27, 500	55, 000	.001750	.000100	.000050	.000050	
28, 000	56, 000	.001750	0.	....	....	
28, 500	57, 000	.001800	.000050	....	....	Elastic limit.
29, 000	58, 000	.001950	.000150	....	....	
29, 500	59, 000	.002200	.000250	....	....	
30, 000	60, 000	.002500	.000300	.000650	.000600	
30, 500	61, 000	.002750	.000250	....	....	
31, 000	62, 000	.003150	.000400	....	....	
31, 500	63, 000	.003550	.000400	....	....	
32, 000	64, 000	.004050	.000500	....	....	
32, 500	65, 000	.004600	.000550	.002550	.001900	
54, 240	108, 480	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds.. 57, 000
Compression per inch under stress at elastic limit ....inch.. 0. 001800
Ultimate strength per square inch of original section ....pounds.. 108, 480
Manner of failure ....triple flexure

No. 1032.

Marks, $^{32}\frac{B\,R_{10}}{T_1}$

Diameter, ″.505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001100	.000200	0.	....	
8,000	40,000	.001300	.000200	0.	....	
9,000	45,000	.001400	.000100	0.	....	
10,000	50,000	.001600	.000200	0.	....	
10,200	51,000	.001650	.000050	....	....	
10,400	52,000	.001700	.000050	....	....	
10,600	53,000	.001750	.000050	....	....	Elastic limit.
10,800	54,000	.001900	.000150	....	....	
11,000	55,000	.002250	.000350	.000550	.000550	
11,200	56,000	.002850	.000600	....	....	
11,400	57,000	.003250	.000400	....	....	
11,600	58,000	.003700	.000450	....	....	
11,800	59,000	.004600	.000900	....	....	
12,000	60,000	.005250	.000650	.003050	.002500	
12,400	62,000	.006300	.001050	....	....	
12,800	64,000	.008100	.001800	....	....	
13,200	66,000	.009650	.001550	....	....	
13,600	68,000	.011150	.001500	....	....	
14,000	70,000	.012650	.001500	....	....	
14,400	72,000	.014200	.001550	....	....	
14,800	74,000	.016050	.001850	....	....	
15,200	76,000	.017750	.001700	....	....	
15,600	78,000	.019750	.002000	....	....	
16,000	80,000	.022000	.002250	....	....	
16,400	82,000	.024500	.002500	....	....	
16,800	84,000	.026600	.002100	....	....	
17,200	86,000	.028750	.002150	....	....	
17,600	88,000	.031750	.003000	....	....	
18,000	90,000	.035600	.003850	....	....	
18,400	92,000	.039000	.003400	....	....	
18,800	94,000	.044250	.005250	....	....	
19,200	96,000	.051150	.006900	....	....	
19,600	98,000	.056000	.004850	....	....	
20,000	100,000	.0600	.0040	....	....	
20,400	102,000	.0850	.0250	....	....	
20,580	102,900	.1050	.0200	....	....	Tensile strength.

General summary.

Specific gravity	7.8646
Tensile strength per square inch of original section .... pounds..	102,900
Elastic limit per square inch of original section .... do...	53,000
Elongation per inch after rupture .... inch..	0.1700
Elongation per inch under strain at elastic limit .... do...	.001750
Reduction in diameter at point of rupture .... do ..	.095
Reduction in area after rupture, per centum of original section	34.0
Position of rupture	″.45 from middle of stem
Character of broken surface	granular; dull center
Elongation of inch sections	″.26, ″.08

No. 536.

Marks,. $^{32}\frac{\mathrm{B\,R}_{10}}{\mathrm{T}_3}$
Length, 4''.50.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000400	.000150	0.	....	
10,000	20,000	.000550	.000150	0.	....	
12,500	25,000	.000700	.000150	0.	....	
15,000	30,000	.000800	.000100	0.	....	
17,500	35,000	.001000	.000200	0.	....	
20,000	40,000	.001200	.000200	0.	....	
22,500	45,000	.001300	.000100	0.	....	
25,000	50,000	.001500	.000200	0.	....	
27,500	55,000	.001600	.000100	0.	....	
28,000	56,000	.001700	.000100	....	....	
28,500	57,000	.001700	0.	....	....	
29,000	58,000	.001750	.000050	....	....	
29,500	59,000	.001800	.000050	....	....	Elastic limit.
30,000	60,000	.001900	.000100	.000150	.000150	
30,500	61,000	.002000	.000100	....	....	
31,000	62,000	.002150	.000150	....	....	
31,500	63,000	.002250	.000100	....	....	
32,000	64,000	.002500	.000250	....	....	
32,500	65,000	.002800	.000300	.000900	.000750	
52,900	105,800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section .... pounds.. 59,000
Compression per inch under stress at elastic limit .... inch.. 0.001800
Ultimate strength per square inch of original section .... pounds.. 105,800
Manner of failure.. .... triple flexure

No. 1103.

Marks, '82 $\frac{\mathrm{B\ B}_{18}}{\mathrm{T}_1}$
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000550	.000150	0.	....	
5, 000	25, 000	.000700	.000150	0.	....	
6, 000	30, 000	.000850	.000150	0.	....	
7, 000	35, 000	.001000	.000150	0.	....	
8, 000	40, 000	.001150	.000150	0.	....	
9, 000	45, 000	.001350	.000200	0.	....	
10, 000	50, 000	.001550	.000200	.000050	.000050	
11, 000	55, 000	.001800	.000250	.000050	0.	
11, 200	56, 000	.001850	.000050	....	....	
11, 400	57, 000	.001900	.000050	....	....	Elastic limit.
11, 600	58, 000	.002100	.000200	....	....	
11, 800	59, 000	.002900	.000800	....	....	
12, 000	60, 000	.003500	.000600	.001350	.001300	
12, 400	62, 000	.004750	.001250	....	....	
12, 800	64, 000	.005750	.001000	....	....	
13, 200	66, 000	.006800	.001050	....	....	
13, 600	68, 000	.008350	.001550	....	....	
14, 000	70, 000	.009750	.001400	....	....	
14, 400	72, 000	.011150	.001400	....	....	
14, 800	74, 000	.012600	.001450	....	....	
15, 200	76, 000	.014350	.001750	....	....	
15, 600	78, 000	.016050	.001700	....	....	
16, 000	80, 000	.018000	.001950	....	....	
16, 400	82, 000	.020000	.002000	....	....	
16, 800	84, 000	.021750	.001750	....	....	
17, 200	86, 000	.023800	.002050	....	....	
17, 600	88, 000	.025750	.001950	....	....	
18, 000	90, 000	.028050	.002300	....	....	
18, 400	92, 000	.030650	.002600	....	....	
18, 800	94, 000	.033550	.002900	....	....	
19, 200	96, 000	.036500	.002950	....	....	
19, 600	98, 000	.040000	.003500	....	....	
20, 000	100, 000	.045000	.005000	....	....	
20, 400	102, 000	.055000	.010000	....	....	
20, 800	104, 000	.0650	.0100	....	....	
21, 200	106, 000	.0750	.0100	....	....	
21, 600	108, 000	.0950	.0200	....	....	
21, 800	109, 000	.1800	.0850	....	....	Tensile strength.

General summary.

Specific gravity	7. 8623
Tensile strength per square inch of original section ....pounds..	109, 000
Elastic limit per square inch of original section ....do...	57, 000
Elongation per inch after rupture ....inch..	0. 1950
Elongation per inch under strain at elastic limit ....do...	.001900
Reduction in diameter at point of rupture ....do...	.085
Reduction in area after rupture, per centum of original section	30. 7
Position of rupture	⅜ inch from neck
Character of broken surface	granular; dull spot at circumference
Elongation of inch sections	''.24*, ''.15

No. 538.

Marks, $^{32}\overset{\text{B R}_{14}}{\text{T}_2}$
Length, 4″.50.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000300	.000200	0.	....	
7,500	15,000	.000500	.000200	0.	....	
10,000	20,000	.000650	.000150	0.	....	
12,500	25,000	.000800	.000150	0.	....	
15,000	30,000	.000950	.000150	0.	....	
17,500	35,000	.001100	.000150	0.	....	
20,000	40,000	.001250	.000150	0.	....	
22,500	45,000	.001400	.000150	0.	....	
25,000	50,000	.001550	.000150	0.	....	
25,500	51,000	.001550	0.	....	....	
26,000	52,000	.001600	.000050	....	....	
26,500	53,000	.001600	0.	....	....	
27,000	54,000	.001650	.000050	....	....	
27,500	55,000	.001650	0.	0.	....	
28,000	56,000	.001700	.000050	....	....	
28,500	57,000	.001700	0.	....	....	
29,000	58,000	.001750	.000050	....	....	
29,500	59,000	.001800	.000050	....	....	Elastic limit.
30,000	60,000	.001900	.000100	.000100	.000100	
30,500	61,000	.002050	.000150	....	....	
31,000	62,000	.002350	.000300	....	....	
31,500	63,000	.002750	.000400	....	....	
32,000	64,000	.003100	.000350	....	....	
32,500	65,000	.003700	.000600	.001300	.001200	
33,000	66,000	.004450	.000750	....	....	
33,500	67,000	.005000	.000550	....	....	
34,000	68,000	.005500	.000500	....	....	
34,500	69,000	.006000	.000500	....	....	
35,000	70,000	.006700	.000700	.004050	.002750	
53,420	106,840	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	59,000
Compression per inch under stress at elastic limit	inch..	0.001800
Ultimate strength per square inch of original section	pounds..	106,840
Manner of failure		triple flexure

No. 1104.

Marks, $^{32}\overset{\mathrm{B\,R_{20}}}{\mathrm{T_1}}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.		
2, 000	10, 000	.000200	.000100	0.		
3, 000	15, 000	.000300	.000100	0.		
4, 000	20, 000	.000450	.000150	0.		
5, 000	25, 000	.000600	.000150	0.		
6, 000	30, 000	.000800	.000200	0.		
7, 000	35, 000	.001000	.000200	0.		
8, 000	40, 000	.001200	.000200	0.		
9, 000	45, 000	.001350	.000150	0.		
10, 000	50, 000	.001500	.000150	0.		
11, 000	55, 000	.001750	.000250	.000050	.000050	
11, 200	56, 000	.001850	.000100			
11, 400	57, 000	.001900	.000050			
11, 600	58, 000	.002050	.000150			
11, 800	59, 000	.002150	.000100			Elastic limit.
12, 000	60, 000	.002400	.000250	.000400	.000350	
12, 400	62, 000	.003300	.000900			
12, 800	64, 000	.004150	.000850			
13, 200	66, 000	.006250	.002100			
13, 600	68, 000	.007650	.001400			
14, 000	70, 000	.009350	.001700			
14, 400	72, 000	.011150	.001800			
14, 800	74, 000	.012250	.001100			
15, 200	76, 000	.013850	.001600			
15, 600	78, 000	.015600	.001750			
16, 000	80, 000	.017500	.001900			
16, 400	82, 000	.019450	.001950			
16, 800	84, 000	.021250	.001800			
17, 200	86, 000	.024150	.002900			
17, 600	88, 000	.026550	.002400			
18, 000	90, 000	.029000	.002450			
18, 400	92, 000	.031500	.002500			
18, 800	94, 000	.034500	.003000			
19, 200	96, 000	.038000	.003500			
19, 600	98, 000	.042300	.004300			
20, 000	100, 000	.049350	.007050			
20, 400	102, 000	.052000	.002650			
20, 800	104, 000	.061750	.009750			
21, 200	106, 000	.0750	.013250			
21, 550	107, 750	.1100	.0350			Tensile strength.

General summary.

Specific gravity	7. 8616
Tensile strength per square inch of original section.....pounds..	107, 750
Elastic limit per square inch of original section.....do...	59, 000
Elongation per inch after rupture.....inch..	0. 1650
Elongation per inch under strain at elastic limit.....do...	.002150
Reduction in diameter at point of rupture.....do...	.095
Reduction in area after rupture, per centum of original section	34. 0
Position of rupture	½ inch from neck
Character of broken surface	granular; dull silky center
Elongation of inch sections	″.25*, ″.08

No. 539.

Marks, $^{32}\underset{T_2}{B}R_{30}$
Length, 4″.49.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	. 000100	. 000100	0.	....	
5, 000	10, 000	. 000250	. 000150	0.	....	
7, 500	15, 000	. 000400	. 000150	0.	....	
10, 000	20, 000	. 000550	. 000150	0.	....	
12, 500	25, 000	. 000700	. 000150	0.	....	
15, 000	30, 000	. 000850	. 000150	0.	....	
17, 500	35, 000	. 001000	. 000150	0.	....	
20, 000	40, 000	. 001200	. 000200	0.	....	
22, 500	45, 000	. 001350	. 000150	0.	....	
25, 000	50, 000	. 001550	. 000200	0.	....	
25, 500	51, 000	. 001600	. 000050	....	....	Elastic limit.
26, 000	52, 000	. 001700	. 000100	....	....	
26, 500	53, 000	. 001950	. 000250	....	....	
27, 000	54, 000	. 002400	. 000450	....	....	
27, 500	55, 000	. 003050	. 000650	. 001200	. 001200	
28, 000	56, 000	. 004650	. 001600	....	....	
28, 500	57, 000	. 006000	. 001350	....	....	
29, 000	58, 000	. 007450	. 001450	....	....	
29, 500	59, 000	. 008950	. 001500	....	....	
30, 000	60, 000	. 010100	. 001450	. 007800	. 006600	
50, 480	100, 960	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds.	51, 000
Compression per inch under stress at elastic limit	inch..	0. 001000
Ultimate strength per square inch of original section	pounds .	100, 960
Manner of failure		triple flexure

No. 1105.

Marks, $^{32}\,\mathrm{B}\,^{\mathrm{R}_{33}}_{\mathrm{T}_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	....	....	
2, 000	10, 000	.000300	.000150	....	....	
3, 000	15, 000	.000450	.000150	....	....	
4, 000	20, 000	.000600	.000150	....	....	
5, 000	25, 000	.000750	.000150	....	....	
6, 000	30, 000	.000900	.000150	....	....	
7, 000	35 000	.001050	.000150	....	....	
8, 000	40, 000	.001250	.000200	....	....	
9, 000	45, 000	.001400	.000150	....	....	
9, 200	46, 000	.001450	.000050	....	....	
9, 400	47, 000	.001500	.000050	....	....	Elastic limit.
9, 600	48, 000	.001800	.000300	....	....	
9, 800	49, 000	.002350	.000550	....	....	
10, 000	50, 000	.002900	.000550	.001150	.001150	
10, 200	51, 000	.003400	.000500	....	....	
10, 400	52, 000	.003650	.000250	....	....	
10, 600	53, 000	.004150	.000500	....	....	
10, 800	54, 000	.004800	.000650	....	....	
11, 000	55, 000	.005400	.000600	.003350	.002200	
11, 200	56, 000	.006100	.000700	....	....	
11, 400	57, 000	.006550	.000450	....	....	
11, 600	58, 000	.007250	.000700	....	....	
11, 800	59, 000	.007900	.000650	....	....	
12, 000	60, 000	.008500	.000600	.006250	.002900	
12, 400	62, 000	.010000	.001500	....	....	
12, 800	64, 000	.011400	.001400	....	....	
13, 200	66, 000	.012900	.001500	....	....	
13, 600	68, 000	.014500	.001600	....	....	
14, 000	70, 000	.016000	.001500	....	....	
14, 400	72, 000	.017550	.001550	....	....	
14, 800	74, 000	.019500	.001950	....	....	
15, 200	76, 000	.021300	.001800	....	....	
15, 600	78, 000	.023700	.002400	....	....	
16, 000	80, 000	.026500	.002800	....	....	
16, 400	82, 000	.028250	.001750	....	....	
16, 800	84, 000	.031000	.002750	....	....	
17, 200	86, 000	.033700	.002700	....	....	
17, 600	88, 000	.037050	.003350	....	....	
18, 000	90, 000	.040000	.002950	....	....	
18, 400	92, 000	.043750	.003750	....	....	
18, 800	94, 000	.049150	.005400	....	....	
19, 200	96, 000	.055000	.005850	....	....	
19, 600	98, 000	.063000	.008000	....	....	
20, 000	100, 000	.0750	.0120	....	....	
20, 400	102, 000	.0950	.0200	....	....	
20, 580	102, 900	.1400	.0450	....	....	Tensile strength.

General summary.

Specific gravity		7. 8672
Tensile strength per square inch of original section	pounds..	102, 900
Elastic limit per square inch of original section	do...	47, 000
Elongation per inch after rupture	inch..	0. 1900
Elongation per inch under strain at elastic limit	do...	.001500
Reduction in diameter at point of rupture	do...	.085
Reduction in area after rupture, per centum of original section		30. 7
Position of rupture		½ inch from middle of stem
Character of broken surface		granular; dull spot near center
Elongation of inch sections		″.26*, ″.12

No. 540.

Marks, $^{32}\overset{\mathrm{B\,R}_{34}}{\mathrm{T}_2}$
Length, 4.″49.
Diameter, ″.797.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000450	.000150	0.	....	
10,000	20,000	.000600	.000150	0.	....	
12,500	25,000	.000750	.000150	0.	....	
15,000	30,000	.000900	.000150	0.	....	
17,500	35,000	.001050	.000150	0.	....	
20,000	40,000	.001200	.000150	0.	....	
22,500	45,000	.001350	.000150	0.	....	
24,000	48,000	.001450	.000100	....	....	
24,500	49,000	.001450	0.	....	....	
25,000	50,000	.001500	.000050	0.	....	Elastic limit
25,500	51,000	.001800	.000300	....	....	
26,000	52,000	.002200	.000400	....	....	
26,500	53,000	.002450	.000250	....	....	
27,000	54,000	.002850	.000400	....	....	
27,500	55,000	.003400	.000550	.001500	.001500	
28,000	56,000	.003800	.000400	....	....	
28,500	57,000	.004350	.000550	....	....	
29,000	58,000	.004850	.000500	....	....	
29,500	59,000	.005500	.000650	....	....	
30,000	60,000	.006200	.000700	.004000	.002500	
47,950	95,900	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds... 50,000
Compression per inch under stress at elastic limit..inch... 0.001500
Ultimate strength per square inch of original section.................................pounds... 95,900
Manner of failure........................... ....triple flexure

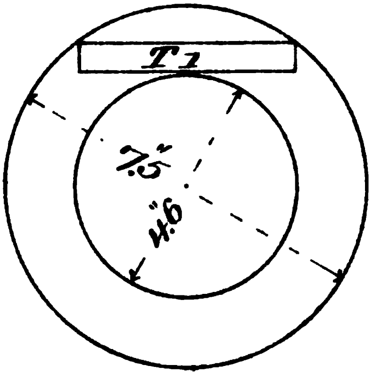
SPECIMENS FROM STEEL SLEEVES

FOR

3".2 STEEL B. L. RIFLES.

Sleeve 3.2" Rifle

General drawing showing
position from whence
specimens were taken.



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SPECIMENS FROM STEEL SLEEVES FOR 3".2 STEEL B. L. RIFLES.

No. 1106.

Marks, $\overset{32\,S_1}{T_1}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000400	.000100	0.	....	
4,000	20,000	.000600	.000200	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001300	.000200	0.	....	
9,000	45,000	.001450	.000150	0.	....	
10,000	50,000	.001650	.000200	.000050	.000050	
11,000	55,000	.001800	.000150	.000050	0.	
11,200	56,000	.001850	.000050	....	....	
11,400	57,000	.001850	0.	....	....	
11,600	58,000	.001900	.000050	....	....	
11,800	59,000	.001950	.000050	....	....	
12,000	60,000	.002050	.000100	.000150	.000100	
12,200	61,000	.002100	.000050	....	....	Elastic limit.
12,400	62,000	.002300	.000200	....	....	
12,600	63,000	.002700	.000400	....	....	
12,800	64,000	.003050	.000350	....	....	
13,000	65,000	.003700	.000650	....	....	
13,200	66,000	.004350	.000650	....	....	
13,400	67,000	.005250	.000900	....	....	
13,600	68,000	.006250	.001000	....	....	
13,800	69,000	.006750	.000500	....	....	
14,000	70,000	.007250	.000500	....	....	
14,400	72,000	.009000	.001750	....	....	
14,800	74,000	.010850	.001850	....	....	
15,200	76,000	.012250	.001400	....	....	
15,600	78,000	.014300	.002050	....	....	
16,000	80,000	.015900	.001600	....	....	
16,400	82,000	.017900	.002000	....	....	
16,800	84,000	.019850	.001950	....	....	
17,200	86,000	.022650	.002800	....	....	
17,600	88,000	.024750	.002100	....	....	
18,000	90,000	.026650	.001900	....	....	
18,400	92,000	.029000	.002350	....	....	
18,800	94,000	.033000	.004000	....	....	
19,200	96,000	.036750	.003750	....	....	
19,600	98,000	.039000	.002250	....	....	
20,000	100,000	.042800	.003800	....	....	
20,400	102,000	.048150	.005350	....	....	
20,800	104,000	.055000	.006850	....	....	
21,200	106,000	.0650	.0100	....	....	
21,600	108,000	.0800	.0150	....	....	
21,900	109,500	.1400	.0600	....	....	Tensile strength.

General summary.

Specific gravity		7.8621
Tensile strength per square inch of original section	pounds	109,500
Elastic limit per square inch of original section	do	61,000
Elongation per inch after rupture	inch	0.2050
Elongation per inch under strain at elastic limit	do	.002100
Reduction in diameter at point of rupture	do	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		at middle of stem
Character of broken surface		silky, 80 per centum; granular, 20 per centum
Elongation of inch sections		".19*, ".22*

No. 1107.

Marks, $^{32\ S}_{T}$,
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads. Total.	Applied loads. Per square inch.	Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch:*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000500	.000200	0.	....	
4, 000	20, 000	.000650	.000150	0.	....	
5, 000	25, 000	.000850	.000200	0.	....	
6, 000	30, 000	.001000	.000150	0.	....	
7, 000	35, 000	.001200	.000200	0.	....	
8, 000	40, 000	.001350	.000150	0.	....	
9, 000	45, 000	.001500	.000150	0.	....	
10, 000	50, 000	.001650	.000150	.000050	.000050	
11, 000	55, 000	.001850	.000200	.000250	.000200	
11, 200	56, 000	.001950	.000100	....	....	Elastic limit.
11, 400	57, 000	.002250	.000300	....	....	
11, 600	58, 000	.002700	.000450	....	....	
11, 800	59, 000	.003200	.000500	....	....	
12, 000	60, 000	.003750	.000550	.001650	.001400	
12, 400	62, 000	.004800	.001050	....	....	
12, 800	64, 000	.006150	.001350	....	....	
13, 200	66, 000	.007750	.001600	....	....	
13, 600	68, 000	.009500	.001750	....	....	
14, 000	70, 000	.011000	.001500	....	....	
14, 400	72, 000	.012300	.001300	....	....	
14, 800	74, 000	.014000	.001700	....	....	
15, 200	76, 000	.016000	.002000	....	....	
15, 600	78, 000	.017600	.001600	....	....	
16, 000	80, 000	.019050	.001450	....	....	
16, 400	82, 000	.020900	.001850	....	....	
16, 800	84, 000	.023050	.002150	....	....	
17, 200	86, 000	.025100	.002050	....	....	
17, 600	88, 000	.028250	.003150	....	....	
18, 000	90, 000	.031250	.003000	....	....	
18, 400	92, 000	.032850	.001600	....	....	
18, 800	94, 000	.035750	.002900	....	....	
19, 200	96, 000	.040000	.004250	....	....	
19, 600	98, 000	.043750	.003750	....	....	
20, 000	100, 000	.049700	.005950	....	....	
20, 400	102, 000	.056000	.006300	....	....	
20, 800	104, 000	.0600	.0040	....	....	
21, 200	106, 000	.0850	.0250	....	....	
21, 300	106, 500	.1200	.0350	....	....	Tensile strength.

General summary.

Specific gravity	7. 8627
Tensile strength per square inch of original section ....pounds..	106, 500
Elastic limit per square inch of original section. ....do...	56, 000
Elongation per inch after rupture ....inch..	0. 1500
Elongation per inch under strain at elastic limit ....do...	.001950
Reduction in diameter at point of rupture ....do...	.085
Reduction in area after rupture, per centum of original section	30. 7
Position of rupture	″.55 from neck
Character of broken surface	granular; dull center
Elongation of inch sections	″.22*, ″.08

No. 1108.

Marks, $^{32}\overset{\text{S}_{10}}{\text{T}_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000900	.000150	....	....	
7,000	35,000	.001050	.000150	....	....	
8,000	40,000	.001250	.000200	....	....	
9,000	45,000	.001400	.000150	....	....	
10,000	50,000	.001550	.000150	0.	....	
11,000	55,000	.001800	.000250	.000050	.000050	Elastic limit
11,200	56,000	.002050	.000250	....	....	
11,400	57,000	.002650	.000600	....	....	
11,600	58,000	.003550	.000900	....	....	
11,800	59,000	.004150	.000600	....	....	
12,000	60,000	.004800	.000650	.002650	.002600	
12,400	62,000	.006500	.001700	....	....	
12,800	64,000	.007700	.001200	....	....	
13,200	66,000	.009100	.001400	....	....	
13,600	68,000	.011000	.001900	....	....	
14,000	70,000	.012400	.001400	....	....	
14,400	72,000	.014100	.001700	....	....	
14,800	74,000	.015600	.001500	....	....	
15,200	76,000	.017300	.001700	....	....	
15,600	78,000	.019500	.002200	....	....	
16,000	80,000	.021250	.001750	....	....	
16,400	82,000	.023500	.002250	....	....	
16,800	84,000	.025850	.002350	....	....	
17,200	86,000	.028500	.002650	....	....	
17,600	88,000	.032000	.003500	....	....	
18,000	90,000	.035100	.003100	....	....	
18,400	92,000	.038550	.003450	....	....	
18,800	94,000	.042250	.003700	....	....	
19,200	96,000	.046750	.004500	....	....	
19,600	98,000	.051400	.004650	....	....	
20,000	100,000	.0600	.0086	....	....	
20,400	102,000	.0700	.0100	....	....	
20,800	104,000	.0900	.0200	....	....	
21,000	105,000	.1200	.0300	....	....	Tensile strength.

General summary.

Specific gravity	7.8636
Tensile strength per square inch of original section .... pounds..	105,000
Elastic limit per square inch of original section .... do...	55,000
Elongation per inch after rupture .... inch..	0.1850
Elongation per inch under strain at elastic limit .... do...	.001800
Reduction in diameter at point of rupture .... do...	.095
Reduction in area after rupture, per centum of original section	34.0
Position of rupture	⅛ inch from middle of stem
Character of broken surface	granular, 50 per centum; dull, silky center, 50 per centum
Elongation of inch sections	″.26*, ″.11

No. 1109.

Marks, $\frac{{}^{32}S_{18}}{T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.		
2,000	10,000	.000250	.000100	0		
3,000	15,000	.000400	.000150	0		
4,000	20,000	.000550	.000150	0		
5,000	25,000	.000800	.000250	0.		
6,000	30,000	.000950	.000150	0.		
7,000	35,000	.001100	.000150	0.		
8,000	40,000	.001250	.000150	0.		
9,000	45,000	.001400	.000150	0.		
10,000	50,000	.001550	.000150	0.		
11,000	55,000	.001700	.000150	0.		
11,200	56,000	.001800	.000100			
11,400	57,000	.001850	.000050			
11,600	58,000	.001900	.000050			
11,800	59,000	.002000	.000100			Elastic limit.
12,000	60,000	.002300	.000300	.000400	.000400	
12,400	62,000	.003200	.000900			
12,800	64,000	.004800	.001100			
13,200	66,000	.005350	.001050			
13,600	68,000	.006750	.001400			
14,000	70,000	.008450	.001700			
14,400	72,000	.009750	.001300			
14,800	74,000	.011300	.001550			
15,200	76,000	.013000	.001700			
15,600	78,000	.015000	.002000			
16,000	80,000	.016550	.001550			
16,400	82,000	.018300	.001750			
16,800	84,000	.020000	.001700			
17,200	86,000	.022500	.002500			
17,600	88,000	.024500	.002000			
18,000	90,000	.026600	.002100			
18,400	92,000	.029000	.002400			
18,800	94,000	.031700	.002700			
19,200	96,000	.034500	.002800			
19,600	98,000	.038200	.003700			
20,000	100,000	.041800	.003600			
20,400	102,000	.046500	.004700			
20,800	104,000	.052100	.005600			
21,200	106,000	.0600	.0079			
21,600	108,000	.0700	.0100			
22,000	110,000	.1050	.0350			Tensile strength.

General summary.

Specific gravity	7,8655
Tensile strength per square inch of original section ... pounds	110,000
Elastic limit per square inch of original section ... do	59,000
Elongation per inch after rupture ... inch	0.1550
Elongation per inch under strain at elastic limit ... do	.002000
Reduction in diameter at point of rupture ... do	.085
Reduction in area after rupture, per centum of original section	30.7
Position of rupture	″.40 from neck
Character of broken surface	granular; dull, silky center
Elongation of inch sections	″.23*, ″.08

No. 2191.

Marks, $^{32\ S_{16}}_{T_1}$
Diameter, ″.504.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	—.000050	—.000050	
2, 000	10, 000	.000200	.000100	—.000050	0.	
3, 000	15, 000	.000300	.000100	—.000050	0.	
4, 000	20, 000	.000400	.000100	—.000100	—.000050	
5, 000	25, 000	.000500	.000100	—.000100	0.	
6, 000	30, 000	.000700	.000200	—.000100	0.	
7, 000	35, 000	.000850	.000150	—.000100	0.	
8, 000	40, 000	.001100	.000250	—.000100	0.	
9, 000	45, 000	.001250	.000150	—.000100	0.	
10, 000	50, 000	.001450	.000200	—.000100	0.	
10, 200	51, 000	.001450	0.	....	....	
10, 400	52, 000	.001500	.000050	....	....	
10, 600	53, 000	.001550	.000050	....	....	
10, 800	54, 000	.001600	.000050	....	....	
11, 000	55, 000	.001600	0.	—.000100	0.	
11, 200	56, 000	.001650	.000050	....	....	
11, 400	57, 000	.001700	.000050	....	....	
11, 600	58, 000	.001750	.000050	....	....	Elastic limit.
11, 800	59, 000	.002000	.000250	....	....	
12, 000	60, 000	.002150	.000150	.000250	.000350	
12, 200	61, 000	.002600	.000450	....	....	
12, 400	62, 000	.002850	.000250	....	....	
12, 600	63, 000	.003200	.000350	....	....	
12, 800	64, 000	.003850	.000650	....	....	
13, 000	65, 000	.004500	.000650	....	....	
13, 200	66, 000	.005200	.000700	....	....	
13, 400	67, 000	.005800	.000600	....	....	
13, 600	68, 000	.006700	.000900	....	....	
13, 800	60, 000	.007800	.001100	....	....	
14, 000	70, 000	.009100	.001300	....	....	
14, 400	72, 000	.010600	.001500	....	....	
14, 800	74, 000	.012350	.001750	....	....	
15, 200	76, 000	.014350	.002000	....	....	
15, 600	78, 000	.016350	.002000	....	....	
16, 000	80, 000	.018150	.001800	....	....	
16, 400	82, 000	.020250	.002100	....	....	
16, 800	84, 000	.022600	.002350	....	....	
17, 200	86, 000	.025200	.002600	....	....	
17, 600	88, 000	.028000	.002800	....	....	
18, 000	90, 000	.030600	.002600	....	....	
18, 400	92, 000	.034050	.003450	....	....	
18, 800	94, 000	.038000	.003950	....	....	
19, 200	96, 000	.042550	.004550	....	....	
19, 600	98, 000	.047250	.004700	....	....	
20, 000	100, 000	.054500	.007250	....	....	
20, 400	102, 000	.0600	.0055	....	....	
20, 800	104, 000	.0900	.0300	....	....	
20, 810	104, 050	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	104, 050
Elastic limit per square inch of original section	do...	58, 000
Elongation per inch after rupture	inch..	0. 1300
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.064
Reduction in area after rupture, per centum of original section		23. 9
Position of rupture		″.55 from neck
Character of broken surface		granular; radiating from a dull spot at circumference
Elongation of inch sections		″.18*, ″.08

[Additional specimens.]

No. 2407.

Marks, $^{32}\genfrac{}{}{0pt}{}{S_{14}}{T_2}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000350	.000200	0.	....	
3, 000	15, 000	.000450	.000100	0.	....	
4, 000	20, 000	.000550	.000100	0.	....	
5, 000	25, 000	.000650	.000100	0.	....	
6, 000	30, 000	.000800	.000150	0.	....	
7, 000	35, 000	.000950	.000150	0.	....	
8, 000	40, 000	.001100	.000150	0.	....	
9, 000	45, 000	.001300	.000200	....	....	
10, 000	50, 000	.001500	.000200	....	....	
10, 200	51, 000	.001550	.000050	....	....	
10, 400	52, 000	.001600	.000050	....	....	
10, 600	53, 000	.001650	.000050	....	....	
10, 800	54, 000	.001750	.000100	....	....	
11, 000	55, 000	.001800	.000050	....	....	
11, 200	56, 000	.001800	0.	....	....	Elastic limit.
11, 400	57, 000	.002500	.000700	....	....	
11, 600	58, 000	.002900	.000400	....	....	
11, 800	59, 000	.003600	.000700	....	....	
12, 000	60, 000	.004750	.001150	....	....	
12, 400	62, 000	.007000	.002250	....	....	
12, 800	64, 000	.009100	.002100	....	....	
13, 200	66, 000	.010600	.001500	....	....	
13, 600	68, 000	.012500	.001900	....	....	
14, 000	70, 000	.014250	.001750	....	....	
14, 400	72, 000	.016150	.001900	....	....	
14, 800	74, 000	.018100	.001950	....	....	
15, 200	76, 000	.020250	.002150	....	....	
15, 600	78, 000	.022250	.002000	....	....	
16, 000	80, 000	.025250	.003000	....	....	
16, 400	82, 000	.028000	.002750	....	....	
16, 800	84, 000	.031000	.003000	....	....	
17, 200	86, 000	.035000	.004000	....	....	
17, 600	88, 000	.038050	.003050	....	....	
18, 000	90, 000	.042550	.004500	....	....	
18, 400	92, 000	.0500	.007450	....	....	
18, 800	94, 000	.0550	.0050	....	....	
19, 200	96, 000	.0600	.0050	....	....	
19, 600	98, 000	.0900	.0300	....	....	
19, 680	98, 400	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	98, 400
Elastic limit per square inch of original section................do...	56, 000
Elongation per inch after rupture................inch..	0. 1000
Elongation per inch under strain at elastic limit ....do...	.001800
Reduction in diameter at point of rupture ....do...	.035
Reduction in area after rupture, per centum of original section	13. 2
Position of rupture................	″.75 from neck
Character of broken surface	granular; crack in stem near point of rupture
Elongation of inch sections................	″.11*, ″.09

No. 2505.

Marks, $\overset{32\ S_{20}}{T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000850	.000200	0.	....	
6,000	30,000	.001000	.000150	0.	....	
7,000	35,000	.001200	.000200	0.	....	
8,000	40,000	.001400	.000200	0.	....	
9,000	45,000	.001550	.000150	0.	....	
10,000	50,000	.001700	.000150	0.	....	
10,200	51,000	.001750	.000050	....	....	
10,400	52,000	.001800	.000050	....	....	
10,600	53,000	.001800	0.	....	....	
10,800	54,000	.001900	.000100	....	....	Elastic limit.
11,000	55,000	.003000	.001100	....	....	
11,200	56,000	.006000	.003000	....	....	
11,400	57,000	.006750	.000750	....	....	
11,600	58,000	.007500	.000750	....	....	
11,800	59,000	.008250	.000750	....	....	
12,000	60,000	.009100	.000850	....	....	
12,400	62,000	.010950	.001850	....	....	
12,800	64,000	.012600	.001650	....	....	
13,200	66,000	.014500	.001900	....	....	
13,600	68,000	.016250	.001750	....	....	
14,000	70,000	.018250	.002000	....	....	
14,400	72,000	.020950	.002700	....	....	
14,800	74,000	.022700	.001750	....	....	
15,200	76,000	.025250	.002550	....	....	
15,600	78,000	.027850	.002600	....	....	
16,000	80,000	.030900	.003050	....	....	
16,400	82,000	.034050	.003150	....	....	
16,800	84,000	.037750	.003700	....	....	
17,200	86,000	.041800	.004050	....	....	
17,600	88,000	.048600	.006800	....	....	
18,000	90,000	.055100	.006500	....	....	
18,400	92,000	.0600	.0049	....	....	
18,800	94,000	.0750	.0150	....	....	
19,200	96,000	.1000	.0250	....	....	
19,400	97,000	.1400	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	97,000
Elastic limit per square inch of original section	do...	54,000
Elongation per inch after rupture	inch..	0.2500
Elongation per inch under strain at elastic limit	do...	.001900
Reduction in diameter at point of rupture	do...	.165
Reduction in area after rupture, per centum of original section		54.6
Position of rupture		″.65 from neck
Character of broken surface		silky
Elongation of inch sections		″.37*, ″.13

No. 2192.

Marks, $^{32}{}^{S_{11}}_{T_1}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000300	.000100	0.	....	
4,000	20,000	.000450	.000150	0.	....	
5,000	25,000	.000600	.000150	0.	....	
6,000	30,000	.000800	.000200	0.	....	
7,000	35,000	.001000	.000200	0.	....	
8,000	40,000	.001150	.000150	0.	....	
9,000	45,000	.001350	.000200	0.	....	
10,000	50,000	.001550	.000200	0.	....	
10,200	51,000	.001600	.000050	....	....	
10,400	52,000	.001650	.000050	....	....	
10,600	53,000	.001700	.000050	....	....	
10,800	54,000	.001700	0.	....	....	Elastic limit.
11,000	55,000	.002000	.000300	....	....	
11,200	56,000	.002900	.000900	....	....	
11,400	57,000	.003450	.000550	....	....	
11,600	58,000	.003950	.000500	....	....	
11,800	59,000	.004500	.000550	....	....	
12,000	60,000	.005400	.000900	....	....	
12,400	62,000	.006750	.001350	....	....	
12,800	64,000	.008500	.001750	....	....	
13,200	66,000	.010000	.001500	....	....	
13,600	68,000	.012200	.002200	....	....	
14,000	70,000	.014250	.002050	....	....	
14,400	72,000	.016250	.002000	....	....	
14,800	74,000	.018000	.001750	....	....	
15,200	76,000	.020000	.002000	....	....	
15,600	78,000	.021850	.001850	....	....	
16,000	80,000	.024300	.002450	....	....	
16,400	82,000	.027000	.002700	....	....	
16,800	84,000	.029550	.002550	....	....	
17,200	86,000	.033000	.003450	....	....	
17,600	88,000	.037000	.004000	....	....	
18,000	90,000	.040800	.003800	....	....	
18,400	92,000	.045350	.004550	....	....	
18,800	94,000	.051500	.006150	....	....	
19,200	96,000	.0600	.0085	....	....	
19,600	98,000	.0750	.0150	....	....	
20,000	100,000	.1000	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	100,000
Elastic limit per square inch of original section	do...	54,000
Elongation per inch after rupture	inch..	0.1900
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	.115
Reduction in area after rupture, per centum of original section		40.3
Position of rupture		".40 from neck
Character of broken surface		granular; dull center
Elongation of inch sections		".30*, ".08

No. 2193.

Marks, $\overset{32\,S_{16}}{T_1}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000450	.000250	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000950	.000200	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001250	.000150	0.	....	
9,000	45,000	.001400	.000150	0.	....	
10,000	50,000	.001550	.000150	0.	....	
10,200	51,000	.001600	.000050	....	....	
10,400	52,000	.001650	.000050	....	....	
10,600	53,000	.001700	.000050	....	....	
10,800	54,000	.001700	0.	....	....	Elastic limit.
11,000	55,000	.001900	.000200	....	....	
11,200	56,000	.002100	.000200	....	....	
11,400	57,000	.002400	.000300	....	....	
11,600	58,000	.002950	.000550	....	....	
11,800	59,000	.003600	.000650	....	....	
12,000	60,000	.004650	.001050	....	....	
12,400	62,000	.006300	.001650	....	....	
12,800	64,000	.007800	.001500	....	....	
13,200	66,000	.009200	.001400	....	....	
13,600	68,000	.010750	.001550	....	....	
14,000	70,000	.012800	.002050	....	....	
14,400	72,000	.014500	.001700	....	....	
14,800	74,000	.016000	.001500	....	....	
15,200	76,000	.018000	.002000	....	....	
15,600	78,000	.019650	.001650	....	....	
16,000	80,000	.021500	.001850	....	....	
16,400	82,000	.024000	.002500	....	....	
16,800	84,000	.026800	.002800	....	....	
17,200	86,000	.029000	.002200	....	....	
17,600	88,000	.031500	.002500	....	....	
18,000	90,000	.034350	.002850	....	....	
18,400	92,000	.038000	.003650	....	....	
18,800	94,000	.041500	.003500	....	....	
19,200	96,000	.046550	.005050	....	....	
19,600	98,000	.052700	.006150	....	....	
20,000	100,000	.0600	.0073	....	....	
20,400	102,000	.0700	.0100	....	....	
20,800	104,000	.0900	.0200	....	....	
20,890	104,450	.1150	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	104,450
Elastic limit per square inch of original section	do...	54,000
Elongation per inch after rupture	inch..	0.1700
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		″.4 from neck
Character of broken surface		granular; dull center
Elongation of inch sections		″.25*, ″.09

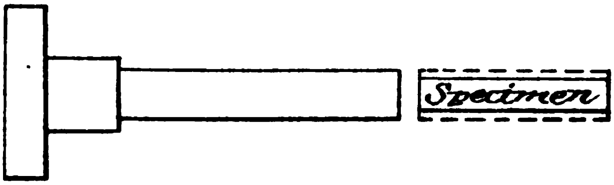
SPECIMENS FROM STEEL OBTURATOR STEMS

FOR

3″.2 STEEL B. L. RIFLES.

Obturator stem 3.2" Rifle

General drawing showing
position from whence
specimens were taken.



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SPECIMENS FROM STEEL OBTURATOR STEMS FOR 3".2 STEEL B. L. RIFLES.

No. 556.

Marks, $^{82}\underset{L_1}{O}\,S_1$
Length, 4".49.
Diameter, ".798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000550	.000150	0.	....	
12, 500	25, 000	.000750	.000200	0.	....	
15, 000	30, 000	.000900	.000150	0.	....	
17, 500	35, 000	.001150	.000250	0.	....	
20, 000	40, 000	.001200	.000050	0.	....	
22, 500	45, 000	.001350	.000150	0.	....	
25, 000	50, 000	.001500	.000150	0.	....	
25, 500	51, 000	.001500	0.	....	....	
26, 000	52, 000	.001550	.000050	....	....	
26, 500	53, 000	.001550	0.	....	....	
27, 000	54, 000	.001600	.000050	....	....	
27, 500	55, 000	.001650	.000050	0.	....	
28, 000	56, 000	.001650	0.	....	....	
28, 500	57, 000	.001700	.000050	....	....	
29, 000	58, 000	.001750	.000050	....	....	
29, 500	50, 000	.001750	0.	....	....	
30, 000	60, 000	.001800	.000050	0.	....	Elastic limit.
30, 500	61, 000	.002000	.000200	....	....	
31, 000	62, 000	.002300	.000300	....	....	
31, 500	63, 000	.002750	.000450	....	....	
32, 000	64, 000	.003250	.000500	....	....	
32, 500	65, 000	.004000	.000750	.001800	.001800	
54, 700	109, 400	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	60, 000
Compression per inch under stress at elastic limit	inch..	0. 001800
Ultimate strength per square inch of original section	pounds..	109, 400
Manner of failure		triple flexure

No. 557.

Marks, $\genfrac{}{}{0pt}{}{^{32}\mathrm{O}\ \mathrm{S}_{1}}{\mathrm{L}_{1}}$
Length, 4''.50.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000300	.000150	0.	....	
7,500	15,000	.000450	.000150	0.	....	
10,000	20,000	.000600	.000150	0.	....	
12,500	25,000	.000750	.000150	0.	....	
15,000	30,000	.000900	.000150	0.	....	
17,500	35,000	.001050	.000150	0.	....	
20,000	40,000	.001200	.000150	0.	....	
22,500	45,000	.001350	.000150	0.	....	
25,000	50,000	.001500	.000150	0.	....	
25,500	51,000	.001500	0.	....	....	
26,000	52,000	.001550	.000050	....	....	
26,500	53,000	.001550	0.	....	....	
27,000	54,000	.001600	.000050	....	....	
27,500	55,000	.001600	0.	0.	....	
28,000	56,000	.001650	.000050	....	....	
28,500	57,000	.001650	0.	....	....	
29,000	58,000	.001700	.000050	....	....	
29,500	59,000	.001700	0.	....	....	
30,000	60,000	.001750	.000050	.000050	.000050	Elastic limit.
30,500	61,000	.001950	.000200	....	....	
31,000	62,000	.002350	.000400	....	....	
31,500	63,000	.002800	.000450	....	....	
32,000	64,000	.003300	.000500	....	....	
32,500	65,000	.004000	.000700	.001950	.001900	
55,450	110,900	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section..pounds.. 60,000
Compression per inch under stress at elastic limit..inch.. 0.001750
Ultimate strength per square inch of original section................................pounds.. 110,900
Manner of failure..triple flexure

No. 558.

Marks, $^{32}\underset{L_1}{O}\,S_{10}$
Length, 4''.50.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000550	.000150	0.	....	
12, 500	25, 000	.000750	.000200	0.	....	
15, 000	30, 000	.000900	.000150	0.	....	
17, 500	35, 000	.001100	.000200	0.	....	
20, 000	40, 000	.001300	.000200	0.	....	
22, 500	45, 000	.001500	.000200	0.	....	
25, 000	50, 000	.001650	.000150	0.	....	
25, 500	51, 000	.001700	.000050	....	....	
26, 000	52, 000	.001750	.000050	....	....	
26, 500	53, 000	.001750	0.	....	....	
27, 000	54, 000	.001800	.000050	....	....	
27, 500	55, 000	.001800	0.	0.	....	
28, 000	56, 000	.001850	.000050	....	....	
28, 500	57, 000	.001900	.000050	....	....	
29, 000	58, 000	.001900	.000050	....	....	
29, 500	59, 000	.001950	0.	....	....	
30, 000	60, 000	.002000	.000050	0.	....	
30, 500	61, 000	.002000	0.	....	....	
31, 000	62, 000	.002050	.000050	....	....	
31, 500	63, 000	.002030	0.	....	....	
32, 000	64, 000	.002100	.000050	....	....	
32, 500	65, 000	.002150	.000050	0.	....	
33, 000	66, 000	.002200	.000050	....	....	
33, 500	67, 000	.002200	0.	....	....	
34, 000	68, 000	.002250	.000050	....	....	
34, 500	69, 000	.002300	.000050	....	....	
35, 000	70, 000	.002300	0.	— .000150	— .000150	
35, 500	71, 000	.002350	.000050	....	....	
36, 000	72, 000	.002350	0.	....	....	
36, 500	73, 000	.002400	.000050	....	....	Elastic limit.
37, 000	74, 000	.002750	.000350	....	....	
37, 500	75, 000	.003250	.000500	.000600	.000750	
55, 380	110, 760	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	73, 000
Compression per inch under stress at elastic limit	inch..	0. 002400
Ultimate strength per square inch of original section	pounds..	110, 760
Manner of failure		triple flexure

No. 559.

Marks, $^{32}\overset{O}{L_{1}}{}^{S_{16}}$
Length, 4''.50.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000250	.000150	0.	....	
7, 500	15, 000	.000400	.000150	0.	....	
10, 000	20, 000	.000550	.000150	0.	....	
12, 500	25, 000	.000750	.000200	0.	....	
15, 000	30, 000	.000900	.000150	0.	....	
17, 500	35, 000	.001050	.000150	0.	....	
20, 000	40, 000	.001250	.000200	0.	....	
22, 500	45, 000	.001400	.000150	0.	....	
25, 000	50, 000	.001550	.000150	0.	....	
25, 500	51, 000	.001600	.000050	....	....	
26, 000	52, 000	.001650	.000050	....	....	
26, 500	53, 000	.001650	0.	....	....	
27, 000	54, 000	.001700	.000050	....	....	
27, 500	55, 000	.001700	0.	0.	....	
28, 000	56, 000	.001750	.000050	....	....	
28, 500	57, 000	.001800	.000050	....	....	Elastic limit.
29, 000	58, 000	.002050	.000250	....	....	
29, 500	59, 000	.002800	.000750	....	....	
30, 000	60, 000	.003800	.001000	.001550	.001550	
30, 500	61, 000	.004700	.000900	....	....	
31, 000	62, 000	.005500	.000800	....	....	
31, 500	63, 000	.006550	.001050	....	....	
32, 000	64; 000	.007750	.001200	....	....	
32, 500	65, 000	.008750	.001000	.006100	.004550	
52, 240	104, 480	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section....................................pounds.. 57, 000
Compression per inch under stress at elastic limit....................................inch.. 0. 001800
Ultimate strength per square inch of original section....................................pounds.. 104, 480
Manner of failure..triple flexure

No. 560.

Marks, $^{32}\underset{L_1}{O}\,S_{30}$
Length, 4″.49.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000250	.000150	0.	....	
7,500	15,000	.000400	.000150	0.	....	
10,000	20,000	.000550	.000150	0.	....	
12,500	25,000	.000750	.000200	0.	....	
15,000	30,000	.000850	.000100	0.	....	
17,500	35,000	.001000	.000150	0.	....	
20,000	40,000	.001150	.000150	0.	....	
22,500	45,000	.001350	.000200	0.	....	
25,000	50,000	.001550	.000200	0.	....	
25,500	51,000	.001550	0.	....	....	
26,000	52,000	.001600	.000050	....	....	
26,500	53,000	.001650	.000050	....	....	
27,000	54,000	.001700	.000050	....	....	
27,500	55,000	.001700	0.	0.	....	
28,000	56,000	.001750	.000050	....	....	
28,500	57,000	.001750	0.	....	....	
29,000	58,000	.001800	.000050	....	....	
29,500	59,000	.001800	0.	....	....	
30,000	60,000	.001850	.000050	0.	....	
30,500	61,000	.001900	.000050	....	....	
31,000	62,000	.002000	.000100	....	....	
31,500	63,000	.002100	.000100	....	....	Elastic limit.
32,000	64,000	.002400	.000300	....	....	
32,500	65,000	.002900	.000500	.000700	.000700	
33,000	66,000	.003300	.000400	....	....	
33,500	67,000	.003650	.000350	....	....	
34,000	68,000	.004050	.000400	....	....	
34,500	69,000	.004400	.000350	....	....	
35,000	70,000	.004850	.000450	.002400	.001700	
56,580	113,160	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section..pounds.. 63,000
Compression per inch under stress at elastic limit..inch.. 0.002100
Ultimate strength per square inch of original section..................................pounds.. 113,160
Manner of failure..triple flexure

No. 561.

Marks, $32\,\underset{\text{L}_1}{\text{O}}\,\text{S}_{28}$
Length, 4''.49.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000250	.000250	0.	....	
5,000	10,000	.000400	.000150	0.	....	
7,500	15,000	.000550	.000150	0.	....	
10,000	20,000	.000750	.000200	0.	....	
12,500	25,000	.000900	.000150	0.	....	
15,000	30,000	.001050	.000150	0.	....	
17,500	35,000	.001250	.000200	0.	....	
20,000	40,000	.001400	.000150	0.	....	
22,500	45,000	.001550	.000150	0.	....	
25,000	50,000	.001700	.000150	.000050	.000050	
25,500	51,000	.001700	0.	....	....	
26,000	52,000	.001750	.000050	....	....	
26,500	53,000	.001750	0.	....	....	
27,000	54,000	.001800	.000050	....	....	
27,500	55,000	.001850	.000050	.000050	0.	
28,000	56,000	.001850	0.	....	....	
28,500	57,000	.001900	.000050	....	....	
29,000	58,000	.001950	.000050	....	....	
29,500	59,000	.001950	0.	....	....	
30,000	60,000	.002000	.000050	.000050	0.	
30,500	61,000	.002050	.000050	....	....	
31,000	62,000	.002100	.000050	....	....	
31,500	63,000	.002150	.000050	....	....	
32,000	64,000	.002250	.000100	....	....	
32,500	65,000	.002300	.000050	.000250	.000200	Elastic limit.
33,000	66,000	.002750	.000450	....	....	
33,500	67,000	.003150	.000400	....	....	
34,000	68,000	.003650	.000500	....	....	
34,500	69,000	.004100	.000450	....	....	
35,000	70,000	.004500	.000400	.002150	.001900	
56,080	112,160	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	65,000
Compression per inch under stress at elastic limit	inch..	0.002300
Ultimate strength per square inch of original section	pounds..	112,160
Manner of failure		triple flexure

TABULATION OF TENSION SPECIMENS FROM TUBES FOR 3″.2 B. L. RIFLES.

[Location of specimens: Inside.]

No. of test.	Position in gun.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.	Specific gravity.
		Pounds.	*Pounds.*	*Per ct.*	*Per ct.*		
1689	Breech No. 1....	50,000	85,350	24.0	51.9	Silky	7.8615
1690	....do	49,000	84,900	20.0	40.3	......do	....
1691	Muzzle No. 1 ...	48,000	85,200	15.0	34.0	Granular; dull spot	....
1692	....do	43,000	80,100	29.0	49.1	Silky	....
*2274	....do	43,000	81,050	25.0	40.3	Granular; dull spot	....
*2275	....do	48,000	84,400	15.0	23.9	......do	....
†2590	Breech No. 1....	56,000	93,400	18.5	40.3	Silky; flaky	....
†2591	....do	55,000	96,000	20.5	37.1	Silky, 80 per cent.; granular, 20 per cent.	....
†2592	Muzzle No. 1 ...	54,000	94,600	26.5	43.3	Silky; flaky	....
†2593	....do	53,000	91,900	23.5	43.3	Silky	....
2596	Breech No. 2 ...	49,000	88,500	24.5	43.3	Silky; slightly granular	....
2597	...do	44,000	86,250	25.0	46.2	......do	....
2198	Muzzle No. 2 ...	48,000	85,350	24.0	46.2	Silky; trace of granulation	....
2199	....do	48,000	86,600	25.0	46.2	Silky	....
1651	Breech No. 3 ...	58,000	95,100	23.5	49.1	Silky; trace of granulation	7.8705
1652	....do	54,000	92,750	23.0	49.1	Silky	....
1653	Muzzle No. 3 ...	54,000	92,900	12.0	13.0	Granular; flaky spot	....
1654	...do	54,000	93,400	19.5	43.3	Granular, 50 per cent.; silky, 50 per cent.	....
*2238	....do	49,000	80,700	28.5	51.9	Silky	....
*2239	....do	39,000	74,550	28.5	49.1	......do	....
†2700	Breech No. 3....	52,000	93,750	23.5	46.2	......do	....
†2701	....do	54,000	97,450	18.0	34.0	Granular; dull flaky center	....
†2702	Muzzle No. 3 ...	56,000	99,100	22.0	40.3	Granular, 20 per cent.; silky, 80 per cent.	....
†2703	...do	56,000	100,800	17.0	34.0	Granular; silky center	....
1655	Breech No. 4....	46,000	84,900	25.0	49.1	Silky	7.8724
1656	....do	44,000	80,400	20.5	37.1	Granular, 50 per cent.; silky, 50 per cent.	....
1657	Muzzle No. 4 ..	53,000	90,050	21.5	49.1	Silky	....
1658	do	50,000	86,850	22.5	46.2	......do	....
2240	Breech No. 5 ...	49,000	85,150	22.5	51.9	......do	7.8651
2241	....do	46,000	85,700	23.5	51.9	Silky; trace of granulation	....
2242	Muzzle No. 5 ...	55,000	84,500	22.5	54.6	Silky	....
2243	...do	53,000	86,050	20.5	49.1	......do	....
1693	Breech No. 6....	54,000	89,350	21.0	40.3	Granular; dull center	7.8702
1694	...do	56,000	89,950	25.5	51.9	Silky	....
1695	Muzzle No. 6 ...	51,000	87,100	24.5	51.9	......do	....
1696	...do	53,000	89,300	23.5	51.9	......do	....
2200	Breech No. 7....	58,000	92,450	23.5	49.1	Granular; silky center	....
2201	...do	57,000	91,950	17.0	46.2	Granular, 50 per cent.; silky, 50 per cent.	....
2202	Muzzle No. 7 ...	50,000	83,000	24.0	49.1	Silky	....
2203	....do	52,000	86,000	22.5	49.1	......do	....
1659	Breech No. 8....	49,000	91,600	22.5	46.2	......do	....
1660	...do	49,000	91,300	20.0	43.3	......do	....
1661	Muzzle No. 8 ...	53,000	87,350	22.0	46.2	......do	....
1662	....do	54,000	88,700	24.5	43.3	......do	....
2204	Breech No. 9 ..	56,000	90,450	24.5	46.2	Granular, 60 per cent.; silky, 40 per cent.	....
2205	do	59,000	93,050	20.0	43.3	Granular; dull silky center	....
2206	Muzzle No. 9 ...	56,000	92,400	21.0	43.3	Granular, 60 per cent.; silky, 40 per cent.	....
2207	...do	55,000	90,100	21.5	46.2	Silky	....
1176	Breech No. 10...	50,000	86,300	27.0	49.1	......do	....
1177	....do	50,000	87,550	23.5	37.1	......do	....
1178	Muzzle No. 10 ..	49,000	87,500	20.0	49.1	......do	....
1179	....do	50,000	89,050	20.0	46.2	......do	....
1663	Breech No. 11...	49,000	90,550	21.5	49.1	Silky	7.8057
1664	....do	51,000	92,400	25.0	49.1	Silky; trace of granulation	....
1665	Muzzle No. 11...	50,000	92,450	20.5	43.3	......do	....
1666	....do	55,000	91,950	21.5	46.2	Silky	....
1163	Breech No. 12...	54,000	92,250	20.5	43.3	......do	7,8654
1164	....do	54,000	89,050	22.5	49.1	......do	....
1165	Muzzle No. 12...	52,000	90,400	22.5	40.3	Silky, 90 per cent.; granular, 10 per cent.	7.8601
1166	....do	53,000	89,400	19.0	40.3	Silky	....
1167	Breech No. 13...	53,000	91,950	19.5	46.2	......do	....
1168	....do	53,000	90,300	19.0	46.2	......do	....
1169	Muzzle No. 13...	53,000	95,550	18.5	43.3	Silky, 50 per cent.; granular, 50 per cent.	7.8590

* Additional specimen.

† New tube.

TABULATION OF TENSION SPECIMENS, ETC.—Continued.

[Location of specimens: Inside.]

No. of test.	Position in gun.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.	Specific gravity.
		Pounds.	*Pounds.*	*Per ct.*	*Per ct.*		
1170	Muzzle No. 13..	59,000	93,400	17.0	40.3	Silky, 40 per cent.; granular, 60 per cent.	....
*2244	Breech No. 13...	49,000	84,850	22.0	46.2	Silky	....
*2245	....do	50,000	88,200	21.5	49.1	......do	....
*2246	Muzzle No. 13...	43,000	80,000	24.0	40.3	Silky, 50 per cent.; granular, 50 per cent.	....
*2247	....do	41,000	79,800	21.5	40.3	......do	....
1667	Breech No. 14...	57,000	96,200	16.5	30.7	Silky center, 40 per cent.; granular, 60 per cent.	7.8589
1668	....do	58,000	100,000	15.0	34.0	Silky center; granular at circumference.	....
1669	Muzzle No. 14...	55,000	90,400	19.0	40.3	Silky	....
1670	....do	54,000	91,800	20.0	46.2	Silky; trace of granulation..	....
*2248	Breech No. 14...	47,000	86,850	20.0	37.1	Granular; dull center	....
*2249	....do	48,000	88,250	19.0	37.1	Granular, 60 per cent.; dull silky, 40 per cent.	....
*2251	Muzzle No. 14...	49,000	84,750	21.0	43.3	Silky, trace of granulation..	....
2250	....do	47,000	82,250	21.5	49.1	Silky	....
2230	Breech No. 15...	53,000	85,850	21.0	43.3	......do	....
2231	....do	55,000	88,900	24.0	46.2	......do	....
2232	Muzzle No. 15...	51,000	84,000	23.0	43.3	Silky; trace of granulation	....
2233	....do	50,000	82,500	20.5	46.2	Silky	....
2399	Breech No. 16...	52,000	89,400	7.0	9.5	Granular; flaky spot	....
2400	....do	49,000	83,750	6.0	9.5	Granular; flaky line	....
2401	Muzzle No. 16...	51,000	86,900	23.5	43.3	Silky	....
2402	....do	50,000	86,600	20.0	43.3	......do	....
*2447	Breech No. 16...	51,000	91,950	19.0	37.1	Granular; dull flaky center	....
*2448	....do	49,000	90,100	7.5	9.5	Granular; flaky spot	....
†2674	....do	47,000	91,100	20.5	37.1	Granular, 60 per cent.; silky, 40 per cent.	....
†2675	....do	47,000	90,750	21.5	43.8	Granular, 40 per cent.; silky, 60 per cent.	....
†2676	Muzzle No. 16...	47,000	87,150	24.0	49.1	Silky	....
†2677	....do	45,000	85,050	21.5	46.2	......do	....
2234	Breech No. 17...	49,000	84,600	23.5	40.3	Dull silky, 50 per cent.; granular, 50 per cent.	....
2235	....do	49,000	82,850	21.5	40.3	Silky, 90 per cent.; granular, 10 per cent.	....
2236	Muzzle No. 17...	44,000	81,250	21.5	43.3	Silky; slightly granular	....
2237	....do	45,000	80,950	22.5	46.2	......do	....
2264	Breech No. 18...	48,000	87,600	21.0	43.3	Silky; with fine granulation.	....
2265	....do	50,000	89,200	18.5	37.1	Granular; dull center	....
2266	Muzzle No. 18...	45,000	79,250	20.5	43.3	......do	....
2267	....do	44,000	82,400	20.5	49.1	Silky	....
1184	Breech No. 19...	52,000	87,450	23.0	43.3	......do	7.8767
1185	....do	50,000	87,450	21.5	43.3	......do	....
1186	Muzzle No. 19...	48,000	88,700	24.0	43.3	......do	....
1187	....do	50,000	89,450	23.5	40.2	Silky; trace of granulation	....
1180	Breech No. 20...	50,000	88,500	20.5	46.2	Silky	7.8665
1181	....do	52,000	92,250	21.0	43.3	Silky, 85 per cent.; granular, 15 per cent.	....
1182	Muzzle No. 20...	49,000	86,450	25.0	51.9	Silky	....
1183	....do	49,000	88,800	21.0	43.3	......do	....
2258	Breech No. 21...	51,000	88,450	23.5	46.2	......do	....
2259	....do	48,000	86,500	21.0	46.2	......do	....
2260	Muzzle No. 21...	47,000	86,050	20.5	46.2	......do	....
2261	....do	50,000	90,250	18.5	40.3	Silky; with fine granulation.	....
1697	Breech No. 22...	40,000	80,300	28.5	40.3	Dull, silky, and granular	....
1698	....do	39,000	79,900	26.0	43.3	......do	....
1699	Muzzle No. 22...	45,000	83,400	26.0	46.2	Silky	....
1700	....do	53,000	89,950	24.0	43.3	......do	....
*2506	Breech No. 22...	41,000	75,500	27.5	51.9	......do	....
*2507	....do	42,000	77,400	24.0	34.0	Granular, 60 per cent.; dull, flaky, 40 per cent.	....
*2508	Muzzle No. 22...	52,000	85,050	25.0	46.2	Silky	....
*2509	....do	53,000	87,450	27.0	46.2	......do	....
1701	Breech No. 23...	53,000	91,050	23.0	40.3	Granular; dull center	....
1702	....do	52,000	93,000	24.0	40.3	......do	....
1703	Muzzle No. 23...	56,000	93,350	20.0	40.3	......do	....
1705	....do	57,000	93,900	21.0	43.3	......do	....
2047	Breech No. 24...	40,000	77,300	26.0	46.2	Silky	....
2048	....do	39,000	78,300	26.5	40.3	Granular, 40 per cent.; dull, silky, 60 per cent.	....

*Additional specimen. † New tube.

TABULATION OF TENSION SPECIMENS, ETC.—Continued.

[Location of specimens: Inside.]

No. of test.	Position in gun.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.	Specific gravity.
		Pounds.	*Pounds.*	*Per ct.*	*Per ct.*		
2049	Muzzle No. 24...	48, 000	85, 850	24. 0	46. 2	Silky........................	....
2050	....do	53, 000	90, 300	23. 0	40. 3	Silky, 40 per cent.; granular, 60 per cent.	....
*2403	Breech No. 24...	42, 000	75, 300	22. 0	49. 1	Silky........................	....
*2404	....do	48, 000	81, 500	24. 5	49. 1	......do........................	....
*2405	Muzzle No. 24...	47, 000	80, 600	20. 5	49. 1	......do........................	....
*2406	....do	54, 000	84, 100	23. 5	46. 2	......do........................	....
*2605	Breech No. 24...	55, 000	90, 400	21. 5	46. 2	......do........................	....
*2606	....do	49, 000	88, 250	21. 5	46. 2	......do........................	....
*2607	Muzzle No. 24...	46, 000	88, 950	24. 0	49. 1	......do........................	....
*2608	....do.	47, 000	81, 500	8. 5	13. 2	Granular; flaky spot........	....
1706	Breech No. 25...	48, 000	85, 750	24. 5	51. 9	Silky........................	....
1707	....do	47, 000	83, 950	25. 5	51. 9	......do........................	....
1708	Muzzle No. 25...	52, 000	88, 500	25. 5	51. 9	......do........................	....
1709	....do	45, 000	83, 000	21. 5	51. 9	......do........................	....

* Additional specimen.

TABULATION OF COMPRESSION SPECIMENS FROM TUBES FOR 3″.2 B. L RIFLES.

[Location of specimens: Inside.]

No. of test.	Position in gun.	Elastic limit per square inch.	Ultimate strength per square inch.	Manner of failure.
		Pounds.	*Pounds.*	
576	Breech No. 1..	....	94, 400	Triple flexure.
*671	Breech No. 1..	48, 000	94, 200	Do.
614	Breech No. 2..	45, 000	89, 600	Do.
567	Breech No. 3..	58, 000	99, 000	Do.
*670	Breech No. 8..	47, 000	99, 380	Do.
568	Breech No. 4..	40, 000	88, 080	Do.
622	Breech No. 5..	48, 000	93, 600	Do.
577	Breech No. 6..	54, 000	96, 600	Do.
615	Breech No. 7..	54, 000	95, 200	Do.
569	Breech No. 8..	48, 000	95, 300	Do.
616	Breech No. 9..	62, 000	97, 600	Do.
564	Breech No. 10..	50, 000	90, 200	Do.
570	Breech No. 11..	50, 000	96, 600	Do.
562	Breech No. 12..	57, 000	95, 720	Do.
563	Breech No. 13..	58, 000	96, 180	Do.
†623	Breech No. 13..	48, 000	92, 200	Do.
571	Breech No. 14..	56, 000	101, 960	Do.
†624	Breech No. 14..	47, 000	92, 600	Do.
620	Breech No. 15..	50, 000	93, 800	Do.
647	Breech No. 16..	49, 000	93, 000	Do.
†668	Breech No. 16..	48, 000	91, 200	Do.
*702	Breech No. 16..	47, 000	90, 420	Do.
621	Breech No. 17..	48, 000	88, 800	Do.
632	Breech No. 18..	46, 000	89, 400	Do.
565	Breech No. 19..	52, 000	90, 900	Do.
566	Breech No. 20..	50, 000	99, 220	Do.
631	Breech No. 21..	40, 000	89, 980	Do.
578	Breech No. 22..	36, 000	87, 600	Do.
653	Breech No. 22..	43, 000	76, 020	Do.
579	Breech No. 23..	....	96, 200	Do.
583	Breech No. 24..	40, 000	87, 600	Do.
†648	Breech No. 24..	38, 000	81, 300	Do.
†677	Breech No. 24..	47, 000	84, 200	Do.
†595	Breech No. 25..	50, 000	91, 600	Do.

* New tube. † Additional specimen.

TABULATION OF TENSION SPECIMENS FROM JACKETS FOR 3".2 B. L. RIFLES.

[Location of specimens: Middle.]

No. of test.	Position in gun.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.	Specific gravity.
		Pounds.	*Pounds.*	*Per ct.*	*Per ct.*		
962	Breech No. 1....	52,000	99,[illegible]00	20.0	40.5	Dull silky..................	7.8695
963	....do	50,000	95,000	16.5	24.0	Granular, 70 per cent.; silky, 30 per cent.; blow-hole.	....
964	Breech No. 2....	60,000	106,000	16.5	30.5	Granular line of silky metal.	7.8656
965	....do	57,000	99,400	18.5	43.5	Silky; trace of granulation..	....
986	Muzzle No. 3....	60,000	107,300	13.0	13.2	Granular line of dull metal..	7.8590
987	....do	57,000	107,250	15.0	23.9	Granular....................	....
*2082	....do	50,000	96,600	21.5	40.3	Granular; dull center.......	....
*2083	....do	50,000	94,600	21.5	30.7	Granular....................	....
*2084	....do	49,000	94,250	10.5	13.2	Granular line of dull-colored metal.	....
*2396	....do	51,000	99,700	20.5	43.3	Silky, with granular metal..	....
*2397	....do	49,000	96,400	22.0	43.3	Silky; traces of granulation.	....
*2398	....do	49,000	95,250	14.5	20.5	Granular line of flaky metal	....
966	Muzzle No. 4....	59,000	104,100	10.5	13.5	Granular line of silky metal.	7.8666
967	....do	52,000	104,000	18.0	17.0	......do....................	....
*2085	....do	50,000	94,350	21.0	40.3	Granular; dull center.......	....
*2086	....do	50,000	91,900	20.5	40.3	Granular; dull spot.........	....
*2087	....do	50,000	93,350	22.5	37.1	......do....................	....
988	Muzzle No. 5....	56,000	100,900	19.5	37.1	Granular; dull silky center	7.8750
989	....do	56,000	100,000	13.5	20.5	Granular line of dull metal..	....
†2262	Breech No. 5....	55,000	95,800	25.0	49.1	Silky.......................	....
†2263	....do	60,000	101,650	20.5	27.4	Granular, radiating from dull spot.	....
1033	Muzzle No. 6....	48,000	94,450	21.0	43.3	Silky.......................	7.8593
1102	....do	48,000	94,750	21.5	46.2	Silky; interspersed with granulation.	....
1110	Muzzle No. 7....	46,000	93,050	21.5	43.3	Silky.......................	7.8671
1111	....do	45,000	90,500	23.5	30.7	......do....................	....
*2221	Breech No. 7....	47,000	93,450	21.5	43.3	Silky; interspersed with fine granulation.	....
*2222	....do	48,000	95,800	15.0	20.5	Granular; dull spot.........	....
*2223	....do	46,000	93,800	20.0	20.5	......do....................	....
*2416	....do	49,000	101,000	19.0	34.0	Granular, 60 per cent.; silky, 40 per cent.	....
*2417	....do	52,000	105,200	15.5	30.7	Granular; dull center.......	....
1112	Breech No. 8....	46,000	91,400	24.5	37.1	Silky, 60 per cent.; granular, 40 per cent.	7.8694
1113	....do	45,000	94,000	17.5	27.4	Granular; dull spot.........	....
*2215	Muzzle No. 8....	48,000	96,100	21.5	34.0	......do....................	....
*2216	....do	44,000	90,350	13.5	16.9	......do....................	....
*2217	....do	47,000	93,300	18.0	27.4	......do....................	....
†2547	....do	52,000	105,600	18.5	34.0	Granular; dull center.......	....
†2548	....do	53,000	108,050	10.0	13.2	Granular....................	....
*2720	....do	53,000	108,100	18.5	30.7	Granular; silky center......	....
*2721	....do	52,000	106,100	17.0	34.0	Granular; silky spot........	....
*2722	....do	53,000	105,900	19.0	34.0	Granular; dull silky center.	....
1114	Breech No. 9....	50,000	98,750	17.5	37.1	Silky.......................	7.8641
1115	....do	48,000	99,600	12.5	5.7	Granular; defective spot....	....
*2212	....do	49,000	94,900	23.5	30.7	Silky.......................	....
*2213	....do	48,000	89,500	10.5	13.2	Granular; dull flaky spot...	....
*2214	....do	49,000	94,100	20.0	43.3	Silky.......................	....
†2549	....do	51,000	106,400	17.0	37.1	Granular; dull center.......	....
†2550	....do	52,000	105,900	17.5	30.7	Granular; dull spot.........	....
2224	Breech No. 10...	55,000	98,850	18.0	43.3	Silky.......................	....
2225	....do	57,000	103,800	15.5	30.7	Granular; dull spot.........	....
2519	Breech No. 11...	48,000	97,500	16.5	27.4	......do....................	....
2520	....do	47,000	96,500	12.0	13.2	Granular; cracks in stem...	....
†2711	....do	51,000	98,400	21.0	34.0	Silky, 40 per cent.; granular 60 per cent.	....
†2712	....do	50,000	98,800	21.0	43.3	Silky; trace of granulation..	....
2226	Breech No. 12...	56,000	96,500	26.0	43.3	Silky.......................	....
2227	....do	53,000	90,000	26.5	51.9	......do....................	....
2078	Breech No. 13...	50,000	95,550	19.0	40.3	Granular; silky center......	....
2079	....do	52,000	97,550	19.0	37.1	Granular; dull center.......	....
2088	Breech No. 14...	53,000	93,600	21.0	43.3	Silky.......................	....
2089	....do	54,000	95,300	22.5	40.3	Silky; trace of granulation..	....
2228	Muzzle No. 15...	53,000	101,550	21.0	37.1	Granular; dull center.......	7.8613
2229	....do	50,000	100,300	21.5	37.1	......do....................	....
2280	Muzzle No. 16...	54,000	101,250	16.5	23.9	Granular; dull spot.........	....
2281	....do	56,000	99,050	22.0	43.3	Silky; in part fine granular...	....

*Additional specimen.

† New jacket.

TABULATION OF TENSION SPECIMENS, ETC.—Continued.

[Location of specimens: Middle.]

No. of test.	Position in gun.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.	Specific gravity.
		Pounds.	*Pounds.*	*Per ct.*	*Per ct.*		
2080	Breech No. 17...	48,000	95,600	21.0	34.0	Granular; dull spot	....
2081	....do	48,000	96,700	21.0	40.3	Silky, with fine granulation.	....
*2545	Muzzle No. 17...	52,000	102,400	18.0	40.3	Dull silky	....
*2546	....do	48,000	94,500	22.5	43.3	......do	....
2076	Breech No. 18...	45,000	94,450	20.5	37.1	Granular, 60 per cent.; silky, 40 per cent.	....
2077	....do	46,000	96,800	20.0	37.1	Granular, 50 per cent.; silky, 50 per cent.	....
*2521	Muzzle No. 18...	49,000	98,700	15.5	23.9	Granular, 60 per cent.; silky, 40 per cent.	....
*2522	....do	49,900	100,400	20.0	37.1	Silky; trace of granulation..	....
2090	Breech No. 19...	63,000	109,800	18.5	40.8	Silky	....
2091	....do	58,000	99,900	21.0	46.2	......do	....
2252	Muzzle No. 20...	52,000	88,500	24.5	46.2	......do	....
2253	....do	57,000	89,600	17.0	27.4	......do	....
2194	Breech No. 21...	53,000	88,400	18.0	20.5	Silky; flaky	....
2195	....do	50,000	86,750	24.0	34.0	Silky	....
*2418	....do	46,000	95,550	22.0	43.3	......do	....
*2419	....do	47,000	92,550	21.5	46.2	......do	....
†2698	Muzzle No. 21...	57,000	107,900	14.0	20.5	Granular; dull spot	....
†2699	....do	57,000	107,400	22.5	37.1	Silky	....
*2616	....do	55,000	102,450	23.5	46.2	......do	....
*2617	....do	54,000	102,100	23.5	30.7	Granular; silky spot	....
2254	Muzzle No. 22...	62,000	109,050	19.5	30.7	Granular; dull metal at circumference.	....
2255	....do	59,000	102,450	20.0	43.3	Silky; trace of granulation..	....
2276	Breech No. 23...	56,000	95,000	21.0	34.0	Granular; dull spot	....
2277	....do	58,000	99,850	24.0	43.3	Silky; trace of granulation..	....
2256	Muzzle No. 24...	59,000	103,550	21.5	43.3	Silky, with fine granulation..	....
2257	....do	57,000	101,600	20.0	40.3	Silky	....
2278	Muzzle No. 25...	54,000	96,600	25.0	49.1	......do	....
2279	....do	53,000	94,000	26.0	49.1	......do	....

*Additional specimen. †New jacket.

TABULATION OF COMPRESSION SPECIMENS FROM JACKET FOR 3''.2 B. L. RIFLES.

[Location of specimens: Middle.]

No. of test.	Position in gun.	Elastic limit per square inch.	Ultimate strength per square inch.	Manner of failure.
		Pounds.	*Pounds.*	
531	Breech No. 1	48, 000	95, 800	Triple flexure.
532	Breech No. 2	54, 000	100, 100	Do.
529	Muzzle No. 3	59, 000	105, 800	Do.
533	Muzzle No. 4	58, 000	104, 000	Do.
530	Muzzle No. 5	54, 000	99, 300	Do.
*633	Breech No. 5	55, 000	100, 000	Do.
537	Muzzle No. 6	50, 000	95, 200	Do.
541	Muzzle No. 7	48, 000	96, 200	Do.
651	Breech No. 7	45, 000	92, 800	Do.
554	Breech No. 8	42, 000	89, 000	Do.
*660	Muzzle No. 8	54, 000	104, 640	Do.
555	Breech No. 9	54, 000	94, 800	Do.
*661	Breech No. 9	51, 000	100, 800	Do.
617	Breech No. 10	50, 000	96, 200	Do.
649	Breech No. 11	43, 000	91, 760	Do.
*676	Breech No. 11	51, 000	98, 200	Do.
618	Breech No. 12	55, 000	91, 600	Do.
609	Breech No. 13	54, 000	99, 800	Do.
611	Breech No. 14	46, 000	92, 000	Do.
619	Muzzle No. 15	50, 000	99, 000	Do.
636	Muzzle No. 16	57, 000	96, 020	Do.
610	Breech No. 17	47, 000	89, 600	Do.
†658	Muzzle No. 17	49, 000	99, 920	Do.
608	Breech No. 18	46, 000	104, 400	Do.
†650	Muzzle No. 18	51, 000	102, 640	Do.
612	Breech No. 19	54, 000	99, 800	Do.
628	Muzzle No. 20	50, 000	91, 000	Do.
613	Breech No. 21	49, 000	85, 600	Do.
†652	......do	48, 000	97, 600	Do.
*669	Muzzle No. 21	56, 000	101, 920	Do.
†678	......do	54, 000	97, 160	Do.
629	Muzzle No. 22	55, 000	96, 360	Do.
634	Breech No. 23	55, 000	95, 040	Do.
630	Muzzle No. 24	57, 000	98, 160	Do.
635	Breech No. 25	56, 000	94, 500	Do.

* New jacket. † Additional specimen.

TABULATION OF TENSION SPECIMENS FROM TRUNNION-HOOPS FOR 3".2 B. L. RIFLES.

[Location of specimens: Middle.]

No. of test.	Position in gun.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.	Specific gravity.
		Pounds.	*Pounds.*	*Per ct.*	*Per ct.*		
2051	T. hoop No. 1	47, 000	90, 400	8. 5	5. 7	Granular	7. 8754
2052	do	48, 000	90, 000	9. 5	5. 7	Granular; surface cracks	
2053	do	50, 000	91, 480	12. 0	13. 2	do	
*2374	do	54, 000	100, 000	15. 5	20. 5	do	
*2375	do	55, 000	97, 900	21. 0	51. 9	Silky	
*2376	do	56, 000	101, 100	16. 0	27. 4	Granular; surface cracks	
2218	T. hoop No. 2	52, 000	91, 850	14. 0	16. 9	do	
2219	do	54, 000	87, 550	19. 5	30. 7	Silky; granular spot	
2220	do	54, 000	87, 500	10. 5	13. 2	Granular; surface cracks	
*2510	do	53, 000	95, 900	15. 5	43. 3	Granular; dull spot	
*2511	do	58, 000	102, 100	14. 5	23. 9	do	
*2512	do	55, 000	98, 700	20. 5	49. 1	Silky	
2282	T. hoop No. 3	52, 000	98, 250	19. 5	27. 4	Granular; surface cracks	
2283	do	52, 000	98, 300	19. 5	34. 0	Granular; dull spot	
2284	do	51, 000	98, 100	13. 5	13. 2	Granular; surface cracks	
2377	T. hoop No. 4	51, 000	99, 600	16. 0	7. 5	do	
2378	do	51, 000	99, 300	18. 0	30. 7	do	
2379	do	54, 000	99, 600	20. 0	27. 4	Granular; dull spot	
2466	T. hoop No. 5	56, 000	100, 900	19. 0	34. 0	do	
2467	do	56, 000	100, 500	18. 5	34. 0	Granular, 60 per cent.; silky, 40 per cent.	
2468	do	52, 000	97, 800	17. 5	27. 4	Granular; surface cracks	
2285	T. hoop No. 6	53, 000	97, 750	21. 0	40. 3	Silky and fine granular	
2286	do	52, 000	95, 600	22. 5	37. 1	Silky; trace of granular	
2287	do	52, 000	98, 100	24. 0	40. 3	Silky, 50 per cent.; granular, 50 per cent.	
2451	T. hoop No. 7	52, 000	97, 600	22. 5	37. 1	Silky; trace of granular.	
2452	do	51, 000	93, 500	7. 0	9. 5	Granular; dull spot	
2453	do	51, 000	98, 800	23. 5	40. 3	Silky	
†2441	do	60, 000	100, 000	21. 0	43. 3	do	
†2442	do	52, 000	93, 900	26. 0	49. 1	do	
†2443	do	55, 000	96, 400	24. 5	49. 1	do	
2454	T. hoop No. 8	53, 000	97, 500	23. 0	43. 3	do	
2455	do	52, 000	96, 950	19. 0	40. 3	Silky; trace of granular	
2456	do	52, 000	97, 600	22. 5	43. 3	do	
2969	T. hoop No. 9	54, 000	99, 600	20. 0	43. 3	Silky	
2470	do	52, 000	96, 300	26. 0	43. 3	do	
2471	do	54, 000	97, 250	23. 0	46. 2	do	
2472	T. hoop No. 10	51, 000	96, 500	20. 0	43. 3	do	
2473	do	49, 000	95, 200	22. 0	37. 1	Silky and fine granular	
2474	do	53, 000	96, 500	25. 0	46. 2	Silky	
2380	T. hoop No. 11	51, 000	95, 500	19. 0	40. 3	Silky, 50 per cent.; granular, 50 per cent.	
2381	do	52, 000	96, 500	21. 5	40. 3	Silky, 60 per cent.; granular, 40 per cent.	
2382	do	50, 000	94, 600	23. 0	40. 3	Silky	
2386	T. hoop No. 12	51, 000	95, 800	21. 5	43. 3	do	
2387	do	51, 000	97, 750	22. 0	40. 3	Silky, 50 per cent.; granular, 50 per cent.	
2388	do	49, 000	94, 600	19. 0	34. 0	Silky, 40 per cent.; granular, 60 per cent.	
2288	T. hoop No. 13	52, 000	98, 600	14. 0	13. 2	Granular; dull spot	
2289	do	49, 000	94, 750	20. 5	30. 7	Granular; surface cracks	
2290	do	52, 000	98, 100	22. 5	40. 3	Granular, 60 per cent.; dull silky, 40 per cent.	
2291	T. hoop No. 14	50, 000	98, 050	19. 0	37. 1	do	
2292	do	51, 000	100, 100	20. 0	30. 7	Granular; small dull spot	
2293	do	51, 000	98, 400	15. 5	27. 4	Granular	
2383	T. hoop No. 15	51, 000	96, 250	20. 0	37. 1	Granular; dull spot	
2384	do	50, 000	88, 000	5. 5	5. 7	Granular	
2385	do	49, 000	94, 900	21. 5	37. 1	Granular; dull spot	
†2444	do	55, 000	95, 800	26. 0	54. 6	Silky	
†2445	do	54, 000	95, 050	25. 0	46. 2	do	
†2446	do	54, 000	95, 600	25. 0	51. 9	do	
2457	T. hoop No. 16	50, 000	96, 500	14. 5	16. 9	Granular; dull spot	
2458	do	52, 000	98, 300	16. 5	27. 4	do	
2459	do	50, 000	87, 900	13. 5	5. 7	Granular	
†2449	do	52, 000	98, 200	20. 0	37. 1	Silky; trace of granular	
†2450	do	52, 000	99, 000	22. 0	37. 1	do	
†2450*a*	do	51, 000	97, 950	19. 5	34. 0	Granular; dull spot	
2460	T. hoop No. 17	52, 000	99, 600	20. 0	37. 1	Granular, 70 per cent.; silky, 30 per cent.	

* New trunnion-hoop.

† Additional specimen.

TABULATION OF TENSION SPECIMENS FROM TRUNNION-HOOPS FOR 3″.2 B. L. RIFLES—Continued.

[Location of specimens: Middle.]

No. of test.	Position in gun.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.	Specific gravity.
		Pounds.	*Pounds.*	*Per ct.*	*Per ct.*		
2461	T. hoop No. 17..	54,000	101,000	20.0	43.0	Silky	7.8754
2462	...do	51,000	98,550	18.0	37.1	Granular, 50 per cent.; silky, 50 per cent.	
2392	T. hoop No. 18..	53,000	95,250	5.5	9.5	Granular	
2393	...do	53,000	98,900	16.0	20.5	......do	
2394	...do	54,000	97,000	22.5	40.3	Granular, 60 per cent.; silky, 40 per cent.	
†2570	....do	47,000	88,800	23.0	34.0	Granular; dull silky spot	
†2571	....do	45,000	83,500	30.5	59.8	Fine silky	
†2572	....do	44,000	84,200	31.0	59.8	Silky	
‡2609	....do	50,000	95,050	20.0	37.1	Granular, 60 per cent.; silky, 40 per cent.	
‡2610	...do	51,000	94,900	19.5	30.7	Granular, 75 per cent.; silky, 25 per cent.	
‡2611	...do	49,000	94,700	19.5	34.0	Granular, 60 per cent.; silky, 40 per cent.	
2587	T. hoop No. 19..	55,000	105,350	14.0	16.0	Granular; dull spot	
2588	....do	56,000	106,400	18.5	23.9	Granular; surface cracks	
2589	....do	54,000	103,600	17.5	16.9	Granular; dull spot	
2513	T. hoop No. 20..	51,000	98,400	18.5	30.7	......do	
2514	....do	51,000	98,900	5.0	5.7	Granular	
2515	....do	51,000	96,500	11.5	9.5	......do	
†2573	....do	48,000	94,000	23.5	40.3	Silky, with fine granulation	
†2574	....do	48,000	94,500	23.5	40.3	......do	
†2575	....do	46,000	90,500	26.0	49.1	Fine, silky	
2389	T. hoop No. 21..	49,000	87,750	8.0	9.5	Granular; surface cracks	
2390	....do	48,000	86,000	10.0	9.5	......do	
2391	....do	49,000	89,950	20.0	37.1	Granular; dull spot	
†2438	....do	48,000	88,150	28.0	51.9	Fine silky	
†2439	....do	51,000	90,700	25.0	49.1	......do	
†2440	....do	50,000	88,050	29.0	51.9	......do	
2516	T. hoop No. 22..	52,000	98,100	20.0	34.0	Granular; dull spot	
2517	....do	51,000	96,250	15.0	16.9	.....do	
2518	....do	51,000	96,300	20.0	37.1	Granular, 60 per cent.; silky, 40 per cent.	
2475	T. hoop No. 23..	52,000	95,000	13.0	16.9	Granular; dull spot	
2476	....do	52,000	96,000	16.0	30.7	......do	
2477	....do	51,000	93,700	15.0	27.4	......do	
2294	T. hoop No. 24..	52,000	94,900	23.5	51.9	Silky	
2295	....do	51,000	95,000	14.0	16.9	Granular; surface cracks	
2296	....do	52,000	93,000	9.0	9.5	Granular; crack in stem	
†2523	....do	59,000	95,100	24.0	9.5	Fine, silky	
†2524	....do	56,000	95,800	26.0	57.2	......do	
†2525	....do	56,000	95,200	25.0	57.2	......do	
2463	T. hoop No. 25...	54,000	98,400	11.0	16.9	Granular; dull spot	
2464	....do	52,000	96,750	16.5	23.9	.....do	
2465	....do	54,000	96,200	19.0	37.1	Silky	
†2704	....do	55,000	96,950	22.5	51.9	......do	
†2705	....do	53,000	96,500	19.5	37.1	.....do	
†2706	...do	55,000	98,250	13.5	30.7	Granular; dull spot	

† Additional specimen.

‡ New trunnion-hoop.

TABULATION OF TENSION SPECIMENS FROM BREECH-BLOCKS FOR 3".2 B. L. RIFLES.

[Location of specimens: Inside.]

No. of test.	Position in gun.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.	Specific gravity.
		Pounds.	*Pounds.*	*Per ct.*	*Per ct.*		
2054	B. block No. 1..	50,000	102,600	15.5	27.4	Granular; dull center.......	7.8671
2044	B. block No. 2..	54,000	102,000	17.0	34.0	......do......................	7.8661
2055	B. block No. 3	51,000	97,600	18.5	27.4	......do......................	7.8691
2064	B. block No. 4..	53,000	100,300	16.0	34.0	......do......................	....
2056	B. block No. 5..	50,000	97,800	18.5	30.7	......do......................	7.8555
2057	B. block No. 6 .	54,000	106,750	17.5	30.7	Granular; dull spot.........	7.8575
2075	B. block No. 7 .	50,000	96,300	19.0	37.1	Granular; dull center.......	....
2043	B. block No. 8..	54,000	101,500	18.5	34.0	......do......................	7.8603
2058	B. block No. 9..	55,000	104,000	18.0	30.7	.....do	7.8649
2059	B. block No. 10..	49,000	100,600	15.5	27.4	......do......................	7.8578
2065	B. block No. 11..	55,000	106,700	17.5	30.7	.....do......................	....
2066	B. block No. 12..	52,000	99,100	21.5	34.0	......do......................	....
2067	B. block No. 13..	55,000	101,500	16.0	30.7	......do......................	....
2069	B. block No. 14..	54,000	101,400	16.0	34.0	......do......................	....
2070	B. block No. 15..	50,000	103,025	16.5	27.4	......do......................	....
2061	B. block No. 16..	52,000	102,400	16.0	30.7	......do......................	....
2071	B. block No. 17..	52,000	100,050	17.0	34.0	......do......................	....
2060	B. block No. 18..	53,000	103,100	18.0	34.0	Granular; dull spot.........	....
2072	B. block No. 19..	52,000	99,900	19.5	34.0	Granular; dull center.......	....
2062	B. block No. 20..	47,000	97,900	16.5	30.7	Granular; dull spot.........	....
2073	B. block No. 21..	49,000	101,550	16.0	34.0	......do......................	....
2063	B. block No. 22..	50,000	99,350	18.0	34.0	Granular; dull center.......	....
2074	B. block No. 23..	47,000	99,150	15.5	30.7	......do......................	....
2068	B. block No. 24..	49,000	98,700	20.5	30.7	......do......................	....
2045	B. block No. 25..	44,000	95,600	19.0	30.7	......do......................	....
*2395	B. block No. 25..	60,000	99,950	22.5	43.3	Silky........................	....

*Additional specimen.

TABULATION OF COMPRESSION SPECIMENS FROM BREECH-BLOCKS FOR 3".2 B. L. RIFLES.

[Location of specimens: Inside.]

No. of test.	Position in gun.	Elastic limit per square inch.	Ultimate strength per square inch.	Manner of failure.
		Pounds.	*Pounds.*	
584	B. block No. 1	57,000	106,200	Triple flexure.
581	B. block No. 2	54,000	108,400	Do.
585	B. block No. 3	52,000	104,600	Do.
596	B. block No. 4	53,000	107,200	Do.
586	B. block No. 5	52,000	108,200	Do.
587	B. block No. 6	57,000	113,200	Do.
607	B. block No. 7	52,000	105,400	Do.
580	B. block No. 8	54,000	109,200	Do.
588	B. block No. 9	55,000	110,800	Do.
589	B. block No. 10	49,000	110,800	Do.
597	B. block No. 11	52,000	112,200	Do.
598	B. block No. 12	61,000	107,200	Do.
599	B. block No. 13	52,000	113,400	Do.
601	B. block No. 14	57,000	111,800	Do.
602	B. block No. 15	52,000	113,800	Do.
592	B. block No. 16	53,000	106,400	Do.
603	B. block No. 17	50,000	105,000	Do.
591	B. block No. 18	60,000	110,800	Do.
604	B. block No. 19	54,000	105,000	Do.
593	B. block No. 20	45,000	101,400	Do.
605	B. block No. 21	50,000	107,800	Do.
594	B. block No. 22	53,000	107,000	Do.
606	B. block No. 23	47,000	103,600	Do.
600	B. block No. 24	50,000	105,400	Do.
582	B. block No. 25	47,000	103,000	Do.
*646	B. block No. 25	61,000	106,320	Do.

*Additional specimen.

TABULATION OF TENSION SPECIMENS FROM BASE-RINGS FOR 3''.2 B. L. RIFLES.

[Location of specimens: Middle.]

No. of test.	Position in gun.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.	Specific gravity.
		Pounds.	*Pounds.*	*Per ct.*	*Per ct.*		
1030	B. ring No. 1...	52,000	103,550	19.0	30.7	Granular; dull center.......	7.8678
1031	B. ring No. 5...	57,000	110,500	15.0	23.9	......do......................	7.8667
1032	B. ring No. 10...	53,000	102,900	17.0	34.0	......do......................	7.8646
1103	B. ring No. 15...	57,000	109,000	19.5	30.7	Granular; dull spot.........	7.8623
1104	B. ring No. 20...	59,000	107,750	16.5	34.0	Granular; dull, silky center.	7.8616
1105	B. ring No. 25...	47,000	102,900	19.0	30.7	Granular; dull spot.........	7.8672

TABULATION OF COMPRESSION SPECIMENS FROM BASE-RINGS FOR 3''.2 B. L. RIFLES.

[Location of specimens: Middle.]

No. of test.	Position in gun.	Elastic limit per square inch.	Ultimate strength per square inch.	Manner of failure.
		Pounds.	*Pounds.*	
534	B. ring No. 1......................................	49,000	101,100	Triple flexure.
535	B. ring No. 5......................................	57,000	108,480	Do.
536	B. ring No. 10......................................	59,000	105,800	Do.
538	B. ring No. 15......................................	59,000	106,840	Do.
539	B. ring No. 20......................................	51,000	100,960	Do.
540	B. ring No. 25......................................	50,000	95,900	Do.

TABULATION OF SPECIMENS FROM SLEEVES FOR 3''.2 B. L. RIFLES.

[Location of specimens: Inside.]

No. of test.	Position in gun.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.	Specific gravity.
		Pounds.	*Pounds.*	*Per ct.*	*Per ct.*		
1106	Sleeve No. 1	61,000	109,500	20.5	40.3	Silky, 80 per cent.; granular, 20 per cent.	7.8621
1107	Sleeve No. 5	56,000	106,500	15.0	30.7	Granular; dull center	7.8627
1108	Sleeve No. 10 ...	55,000	105,000	18.5	34.0	Granular, 50 per cent.; dull silky, 50 per cent.	7.8636
1109	Sleeve No. 15 ...	59,000	110,000	15.5	30.7	Granular; dull, silky center.	7.8655
2191	Sleeve No. 16 ...	58,000	104,050	13.0	23.9	Granular; dull spot	....
*2407	Sleeve No. 16 ...	56,000	98,400	10.0	13.2	Granular; crack in stem	....
2505	Sleeve No. 20 ...	54,000	97,000	25.0	54.6	Silky..........................	....
2192	Sleeve No. 21 ...	54,000	100,000	19.0	40.3	Granular; dull center	....
2193	Sleeve No. 25 ...	54,000	104,450	17.0	34.0	......do......................	....

*Additional specimen.

TABULATION OF COMPRESSION SPECIMENS FROM OBTURATOR STEMS FOR 3''.2 B. L. RIFLES.

[Location of specimens: End.]

No. of test.	Position in gun.	Elastic limit per square inch.	Ultimate strength per square inch.	Manner of failure.
		Pounds.	*Pounds.*	
556	Obturator stem No. 1	60,000	109,400	Triple flexure.
557	Obturator stem No. 5	60,000	110,900	Do.
558	Obturator stem No. 10	73,000	110,760	Do.
559	Obturator stem No. 15	57,000	104,480	Do.
560	Obturator stem No. 20	63,000	113,160	Do.
561	Obturator stem No. 25	65,000	112,160	Do.

5-INCH STEEL B. L. RIFLE NO. 1.

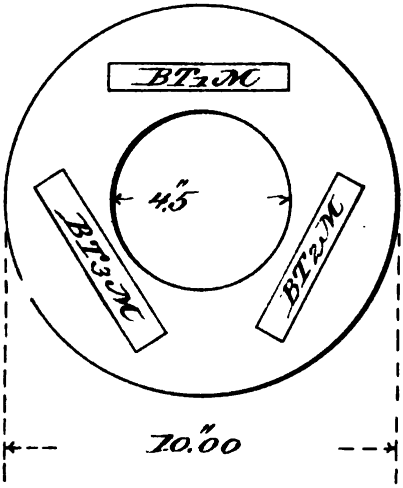
STEEL SPECIMENS

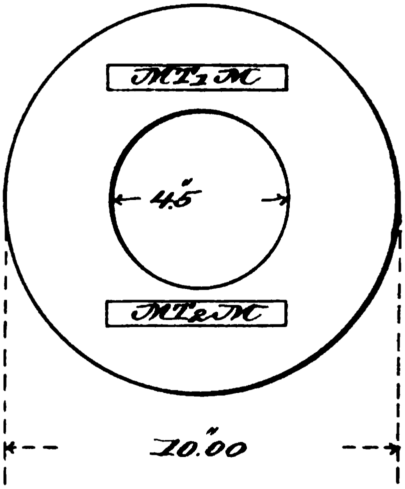
FROM

TUBE, JACKET, TRUNNION-HOOP, BREECH-BLOCK, BASE-RING, SLEEVE, AND OBTURATOR STEM.

5" Steel B.L. Rifle No. 1

Tube





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SPECIMENS FROM 5-INCH STEEL B. L. RIFLE NO. 1.

No. 2530.

Marks, $^{5\,R_1\,T}_{B\,T_1\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000550	.000100	0.	....	
5,000	25,000	.000750	.000200	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001100	.000200	....	....	
8,000	40,000	.001300	.000200	....	....	
8,200	41,000	.001350	.000050	....	....	
8,400	42,000	.001400	.000050	....	....	Elastic limit.
8,600	43,000	.006000	.004600	....	....	
8,800	44,000	.006000	.000900	....	....	
9,000	45,000	.008000	.001100	....	....	
9,200	46,000	.009000	.001000	....	....	
9,400	47,000	.010050	.001050	....	....	
9,600	48,000	.011500	.001450	....	....	
9,800	49,000	.012250	.000750	....	....	
10,000	50,000	.013500	.001250	....	....	
10,400	52,000	.015750	.002250	....	....	
10,800	54,000	.019000	.003250	....	....	
11,200	56,000	.021250	.002250	....	....	
11,600	58,000	.024000	.002750	....	....	
12,000	60,000	.027500	.003500	....	....	
12,400	62,000	.031000	.003500	....	....	
12,800	64,000	.035000	.004000	....	....	
13,200	66,000	.039750	.004750	....	....	
13,600	68,000	.045000	.005250	....	....	
14,000	70,000	.052000	.007000	....	....	
14,400	72,000	.0600	.0080	....	....	
14,800	74,000	.0700	.0100	....	....	
15,200	76,000	.0900	.0200	....	....	
15,600	78,000	.1300	.0400	....	....	
15,800	79,000	.1800	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	79,000
Elastic limit per square inch of original section	do...	42,000
Elongation per inch after rupture	inch..	0.2950
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.155
Reduction in area after rupture, per centum of original section		51.9
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		″.30*, ″.29*

No. 2531.

Marks, $\overset{5\ R,\ T}{B\ T,\ M}$
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000200	.000200	0.	....	
2, 000	10, 000	.000350	.000150	0.	....	
3, 000	15, 000	.000550	.000200	0.	....	
4, 000	20, 000	.000700	.000150	0.	....	
5, 000	25, 000	.000850	.000150	0.	....	
6, 000	30, 000	.001000	.000150	0.	....	
7, 000	35, 000	.001200	.000200	....	....	
7, 200	36, 000	.001300	.000100	....	....	
7, 400	37, 000	.001350	.000050	....	....	
7, 600	38, 000	.001400	.000050	....	....	
7, 800	39, 000	.001450	.000050	....	....	
8, 000	40, 000	.001550	.000100	....	....	
8, 200	41, 000	.001600	.000050	....	....	
8, 400	42, 000	.001650	.000050	....	....	Elastic limit.
8, 600	43, 000	.004000	.002350	....	....	
8, 800	44, 000	.005700	.001700	....	....	
9, 000	45, 000	.006400	.000700	....	....	
9, 200	46, 000	.007400	.001000	....	....	
9, 400	47, 000	.008350	.000950	....	....	
9, 600	48, 000	.009250	.000900	....	....	
9, 800	49, 000	.010500	.001250	....	....	
10, 000	50, 000	.011500	.001000	....	....	
10, 400	52, 000	.014250	.002750	....	....	
10, 800	54, 000	.016500	.002250	....	....	
11, 200	56, 000	.018550	.002050	....	....	
11, 600	58, 000	.021250	.002700	....	....	
12, 000	60, 000	.024250	.003000	....	....	
12, 400	62, 000	.028000	.003750	....	....	
12, 800	64, 000	.031000	.003000	....	....	
13, 200	66, 000	.034000	.003000	....	....	
13, 600	68, 000	.038500	.004500	....	....	
14, 000	70, 000	.044250	.005750	....	....	
14, 400	72, 000	.051000	.006750	....	....	
14, 800	74, 000	.0550	.0040	....	....	
15, 200	76, 000	.0650	.0100	....	....	
15, 600	78, 000	.0900	.0250	....	....	
16, 000	80, 000	.1400	.0500	....	....	
16, 010	80, 050	.1550	.0150	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80, 050
Elastic limit per square inch of original section	do...	42, 000
Elongation per inch after rupture	inch..	0. 2650
Elongation per inch under strain at elastic limit	do...	.001650
Reduction in diameter at point of rupture	do...	.165
Reduction in area after rupture, per centum of original section		54. 6
Position of rupture		''.60 from neck
Character of broken surface		silky
Elongation of inch sections		'.15, ''.38*

No. 657.

Marks, $\frac{5\,R_1\,T}{B\,T_2\,M}$
Length, 4″.505.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied load.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000267	.000167	0.	....	
7,500	15,000	.000400	.000133	0.	....	
10,000	20,000	.000567	.000167	0.	....	
12,500	25,000	.000767	.000200	0.	....	
15,000	30,000	.000933	.000166	0.	....	
17,500	35,000	.001100	.000167	0.	....	
20,000	40,000	.001233	.000133	....	....	
20,500	41,000	.001267	.000034	....	....	
21,000	42,000	.001333	.000066	....	....	
21,500	43,000	.001367	.000034	....	....	
22,000	44,000	.001400	.000033	....	....	
22,500	45,000	.001467	.000067	....	....	Elastic limit.
23,000	46,000	.004400	.002933	....	....	
23,500	47,000	.006700	.002300	....	....	
24,000	48,000	.007933	.001233	....	....	
40,380	80,760	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section..pounds.. 45,000
Compression per inch under stress at elastic limit ....inch.. 0.001467
Ultimate strength per square inch of original section................................pounds.. 80,760
Manner of failure..triple flexure

No. 2532.

Marks, $\genfrac{}{}{0pt}{}{5\,R_1\,T}{M\,T_1\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000200	.000200	0.	....	
2, 000	10, 000	.000400	.000200	0.	....	
3, 000	15, 000	.000550	.000150	0.	....	
4, 000	20, 000	.000650	.000100	0.	....	
5, 000	25, 000	.000850	.000200	0.	....	
6, 000	30, 000	.001000	.000150	0.	....	
7, 000	35, 000	.001200	.000200	....	....	
8, 000	40, 000	.001500	.000300	....	....	
8, 200	41, 000	.001550	.000050	....	....	
8, 400	42, 000	.001600	.000050	....	....	Elastic limit.
8, 600	43, 000	.001800	.000200	....	....	
8, 800	44, 000	.002250	.000450	....	....	
9, 000	45, 000	.003150	.000900	....	....	
9, 200	46, 000	.004050	.000900	....	....	
9, 400	47, 000	.005100	.001050	....	....	
9, 600	48, 000	.006250	.001150	....	....	
9, 800	49, 000	.007400	.001150	....	....	
10, 000	50, 000	.008600	.001200	....	....	
10, 400	52, 000	.010400	.001800	....	....	
10, 800	54, 000	.012600	.002200	....	....	
11, 200	56, 000	.015350	.002750	....	....	
11, 600	58, 000	.017250	.001900	....	....	
12, 000	60, 000	.019500	.002250	....	....	
12, 400	62, 000	.021750	.002250	....	....	
12, 800	64, 000	.025000	.003250	....	....	
13, 200	66, 000	.028050	.003050	....	....	
13, 600	68, 000	.031500	.003450	....	....	
14, 000	70, 000	.036050	.004550	....	....	
14, 400	72, 000	.041000	.004950	....	....	
14, 800	74, 000	.046250	.005250	....	....	
15, 200	76, 000	.051750	.005500	....	....	
15, 600	78, 000	.0600	.008250	....	....	
16, 000	80, 000	.0750	.0150	....	....	
16, 400	82, 000	.1000	.0250	....	....	
16, 610	83, 500	.1400	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	83, 050
Elastic limit per square inch of original section	do...	42, 000
Elongation per inch after rupture	inch..	0. 2050
Elongation per inch under strain at elastic limit	do...	.001600
Reduction in diameter at point of rupture	do...	.095
Reduction in area after rupture, per centum of original section		34. 0
Position of rupture		¾ inch from neck
Character of broken surface		granular, 65 per centum; silky, 35 per centum
Elongation of inch sections		″.14, ″.27*

No. 2533.

Marks, $^{5\,R,\,T}_{M\,T,\,M}$
Diameter, ''.505.
Sectional area, .20 square inch.

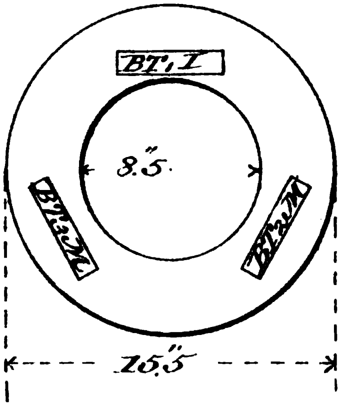
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000500	.000150	0.	....	
5,000	25,000	.000700	.000200	0.	....	
6,000	30,000	.000850	.000150	0.	....	
7,000	35,000	.001000	.000150	....	....	
8,000	40,000	.001250	.000250	....	....	
8,200	41,000	.001300	.000050	....	....	
8,400	42,000	.001350	.000050	....	....	Elastic limit.
8,600	43,000	.001600	.000250	....	....	
8,800	44,000	.002150	.000550	....	....	
9,000	45,000	.003350	.001200	....	....	
9,200	46,000	.004000	.000650	....	....	
9,400	47,000	.005100	.001100	....	....	
9,600	48,000	.006400	.001300	....	....	
9,800	49,000	.007250	.000850	....	....	
10,000	50,000	.008250	.001000	....	....	
10,400	52,000	.010200	.001950	....	....	
10,800	54,000	.012750	.002550	....	....	
11,200	56,000	.015000	.002250	....	....	
11,600	58,000	.017500	.002500	....	....	
12,000	60,000	.020000	.002500	....	....	
12,400	62,000	.022500	.002500	....	....	
12,800	64,000	.025750	.003250	....	....	
13,200	66,000	.028750	.003000	....	....	
13,600	68,000	.032800	.004050	....	....	
14,000	70,000	.037000	.004200	....	....	
14,400	72,000	.041750	.004750	....	....	
14,800	74,000	.048000	.006250	....	....	
15,200	76,000	.055000	.007000	....	....	
15,600	78,000	.0600	.0050	....	....	
16,000	80,000	.0800	.0200	....	....	
16,400	82,000	.1050	.0250	....	....	
16,570	82,850	.1500	.0450	....	....	Tensile strength.

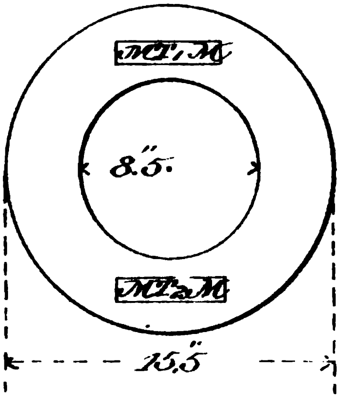
General summary.

Tensile strength per square inch of original section	pounds.	82,850
Elastic limit per square inch of original section	do...	42,000
Elongation per inch after rupture	inch..	0.2450
Elongation per inch under strain at elastic limit	do...	.001350
Reduction in diameter at point of rupture	do...	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		''.95 from neck
Character of broken surface		silky
Elongation of inch sections		''.34*, ''.15

5" Steel B.L. Rifle No. 1

Jacket





No. 2551.

Marks, $\genfrac{}{}{0pt}{}{5\,R_1\,J}{B\,T_1\,I}$
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000250	.000150	0.	....	
3, 000	15, 000	.000450	.000200	0.	....	
4, 000	20, 000	.000650	.000200	0.	....	
5, 000	25, 000	.000850	.000200	0.	....	
6, 000	30, 000	.001050	.000200	0.	....	
7, 000	35, 000	.001200	.000150	....	....	
8, 000	40, 000	.001350	.000150	....	....	
9, 000	45, 000	.001550	.000200	....	....	
9, 200	46, 000	.001600	.000050	....	....	
9, 400	47, 000	.001700	.000100	....	....	
9, 600	48, 000	.001800	.000100	....	....	Elastic limit.
9, 800	49, 000	.002350	.000550	....	....	
10, 000	50, 000	.002850	.000500	....	....	
10, 200	51, 000	.003350	.000500	....	....	
10, 400	52, 000	.004000	.000650	....	....	
10, 600	53, 000	.004450	.000450	....	....	
10, 800	54, 000	.005050	.000600	....	....	
11, 000	55, 000	.005650	.000600	....	....	
11, 200	56, 000	.006600	.000950	....	....	
11, 400	57, 000	.007500	.000900	....	....	
11, 600	58, 000	.008250	.000750	....	....	
11, 800	59, 000	.009050	.000800	....	....	
12, 000	60, 000	.009550	.000500	....	....	
12, 400	62, 000	.011200	.001650	....	....	
12, 800	64, 000	.013300	.002100	....	....	
13, 200	66, 000	.014650	.001350	....	....	
13, 600	68, 000	.017000	.002350	....	....	
14, 000	70, 000	.019000	.002000	....	....	
14, 400	72, 000	.020600	.001600	....	....	
14, 800	74, 000	.022900	.002300	....	....	
15, 200	76, 000	.025000	.002100	....	....	
15, 600	78, 000	.027600	.002600	....	....	
16, 000	80, 000	.030600	.003000	....	....	
16, 400	82, 000	.033550	.002950	....	....	
16, 800	84, 000	.037500	.003950	....	....	
17, 200	86, 000	.041250	.003750	....	....	
17, 600	88, 000	.046000	.004750	....	....	
18, 000	90, 000	.052500	.006500	....	....	
18, 400	92, 000	.0600	.0075	....	....	
18, 720	93, 600	.0650	.0050	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................pounds.. 93, 600
Elastic limit per square inch of original section....................do .. 48, 000
Elongation per inch after rupture....................inch.. 0. 0650
Elongation per inch under strain at elastic limit....................do... .001800
Reduction in diameter at point of rupture....................do... .025
Reduction in area after rupture, per centum of original section.................... 9.5
Position of rupture....................''.35 from neck
Character of broken surface, granular; line of flaky metal across fractured surface; opened small cracks in the surface of stem.
Elongation of inch sections....................''.06, ''.07*

No. 2552.

Marks, $^{5\ R_1\ J}_{B\ T_2\ M}$
Diameter, ''.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.		
2,000	10,000	.000250	.000150	0.		
3,000	15,000	.000400	.000150	0.		
4,000	20,000	.000500	.000100	0.		
5,000	25,000	.000650	.000150	0.		
6,000	30,000	.000800	.000150	0.		
7,000	35,000	.001000	.000200			
8,000	40,000	.001150	.000150			
9,000	45,000	.001400	.000250			Elastic limit.
9,200	46,000	.001600	.000200			
9,400	47,000	.003000	.001400			
9,600	48,000	.003500	.000500			
9,800	49,000	.004350	.000850			
10,000	50,000	.005150	.000800			
10,200	51,000	.006000	.000850			
10,400	52,000	.006550	.000550			
10,600	53,000	.007150	.000600			
10,800	54,000	.008250	.001100			
11,000	55,000	.008750	.000500			
11,200	56,000	.009500	.000750			
11,400	57,000	.010250	.000750			
11,600	58,000	.011250	.001000			
11,800	59,000	.012000	.000750			
12,000	60,000	.012800	.000800			
12,400	62,000	.014600	.001800			
12,800	64,000	.016500	.001900			
13,200	66,000	.018400	.001900			
13,600	68,000	.020350	.001950			
14,000	70,000	.022450	.002100			
14,400	72,000	.024850	.002400			
14,800	74,000	.027200	.002350			
15,200	76,000	.030000	.002800			
15,600	78,000	.033500	.003500			
16,000	80,000	.036900	.003400			
16,400	82,000	.040600	.003700			
16,800	84,000	.044900	.004300			
17,200	86,000	.050250	.005350			
17,600	88,000	.0550	.004750			
18,000	90,000	.0650	.0100			
18,400	92,000	.0800	.0150			
18,800	94,000	.0950	.0150			
19,120	95,600	.1450	.0500			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	95,600
Elastic limit per square inch of original section	do...	45,000
Elongation per inch after rupture	inch..	0.2250
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.125
Reduction in area after rupture, per centum of original section		43.3
Position of rupture	''.85 from neck;	oblique
Character of broken surface		silky
Elongation of inch sections		''.12, ''.33*

No. 659.

Marks, $^{5\,R,\,J}_{B\,T,\,M}$
Length, 4".507.
Diameter, ".798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000067	.000067	0.	....	
5, 000	10, 000	.000300	.000233	0.	....	
7, 500	15, 000	.000500	.000200	0.	....	
10, 000	20, 000	.000667	.000167	0.	....	
12, 500	25, 000	.000833	.000166	0.	....	
15, 000	30, 000	.001000	.000167	0.	....	
17, 500	35, 000	.001200	.000200	0.	....	
20, 000	40, 000	.001300	.000100	....	....	
20, 500	41, 000	.001333	.000033	....	....	
21, 000	42, 000	.001367	.000034	....	....	
21, 500	43, 000	.001400	.000033	....	....	
22, 000	44, 000	.001400	0.	....	....	
22, 500	45, 000	.001433	.000033	....	....	
23, 000	46, 000	.001467	.000034	....	....	Elastic limit.
23, 500	47, 000	.002633	.001166	....	....	
24, 000	48, 000	.003833	.001200	....	....	
24, 500	49, 000	.004733	.000900	....	....	
25, 000	50, 000	.005000	.000266	....	....	
45, 660	91, 320	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	46, 000
Compression per inch under stress at elastic limit	inch..	0. 001467
Ultimate strength per square inch of original section	pounds..	91, 320
Manner of failure		triple flexure

No. 2553.

Marks, $\overset{5}{M}\ \overset{R,}{T,}\ \overset{J}{M}$

Diameter, ″.506.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000100	.000100	0.	....	
2, 000	10, 000	.000200	.000100	0.	....	
3, 000	15, 000	.000350	.000150	0.	....	
4, 000	20, 000	.000550	.000200	0.	....	
5, 000	25, 000	.000700	.000150	0.	....	
6, 000	30, 000	.000850	.000150	0.	....	
7, 000	35, 000	.001050	.000200	....	....	
8, 000	40, 000	.001250	.000200	....	....	
9, 000	45, 000	.001400	.000150	....	....	
9, 200	46, 000	.001400	0.	....	....	
9, 400	47, 000	.001450	.000050	....	....	
9, 600	48, 000	.001500	.000050	....	....	
9, 800	49, 000	.001550	.000050	....	....	
10, 000	50, 000	.001550	0.	....	....	
10, 200	51, 000	.001600	.000050	....	....	
10, 400	52, 000	.001600	0.	....	....	
10, 600	53, 000	.001650	.000050	....	....	
10, 800	54, 000	.001700	.000050	....	....	
11, 000	55, 000	.001750	.000050	....	....	Elastic limit.
11, 200	56, 000	.002100	.000350	....	....	
11, 400	57, 000	.002900	.000800	....	....	
11, 600	58, 000	.003500	.000600	....	....	
11, 800	59, 000	.004100	.000600	....	....	
12, 000	60, 000	.005000	.000900	....	....	
12, 400	62, 000	.006100	.001100	....	....	
12, 800	64, 000	.007600	.001500	....	....	
13, 200	66, 000	.009100	.001500	....	....	
13, 600	68, 000	.010600	.001500	....	....	
14, 000	70, 000	.012100	.001500	....	....	
14, 400	72, 000	.013750	.001650	....	....	
14, 800	74, 000	.015600	.001850	....	....	
15, 200	76, 000	.017200	.001600	....	....	
15, 600	78, 000	.019000	.001800	....	....	
16, 000	80, 000	.020600	.001600	....	....	
16, 400	82, 000	.023000	.002400	....	....	
16, 800	84, 000	.025000	.002000	....	....	
17, 200	86, 000	.027550	.002550	....	....	
17, 600	88, 000	.030250	.002700	....	....	
18, 000	90, 000	.032500	.002250	....	....	
18, 400	92, 000	.035500	.003000	....	....	
18, 800	94, 000	.039000	.003500	....	....	
19, 200	96, 000	.043000	.004000	....	....	
19, 600	98, 000	.047500	.004500	....	....	
20, 000	100, 000	.0550	.0075	....	....	
20, 400	102, 000	.0600	.0050	....	....	
20, 800	104, 000	.0700	.0100	....	....	
21, 200	106, 000	.1000	.0300	....	....	
21, 310	106, 550	.1300	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	106, 550
Elastic limit per square inch of original section	do...	55, 000
Elongation per inch after rupture	inch..	0. 1850
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.076
Reduction in area after rupture, per centum of original section		27.4
Position of rupture		″.55 from neck
Character of broken surface		granular; radiating from a dull spot at the circumference
Elongation of inch sections		″.24*, ″.13

No. 2554.

Marks, $^{5\,R_1\,J}_{M\,T_2\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

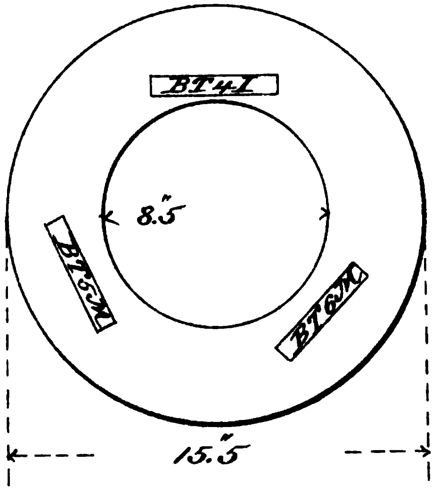
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000200	.000100	0.	....	
3,000	15,000	.000350	.000150	0.	....	
4,000	20,000	.000500	.000150	0.	....	
5,000	25,000	.000600	.000100	0.	....	
6,000	30,000	.000800	.000200	0.	....	
7,000	35,000	.000950	.000150	....	....	
8,000	40,000	.001150	.000200	....	....	
9,000	45,000	.001350	.000200	....	....	
9,200	46,000	.001400	.000050	....	....	
9,400	47,000	.001400	0.	....	....	
9,600	48,000	.001450	.000050	....	....	
9,800	49,000	.001450	0.	....	....	
10,000	50,000	.001500	.000050	....	....	
10,200	51,000	.001500	0.	....	....	
10,400	52,000	.001550	.000050	....	....	
10,600	53,000	.001650	.000100	....	....	
10,800	54,000	.001700	.000050	....	....	
11,000	55,000	.001750	.000050	....	....	
11,200	56,000	.001800	.000050	....	....	Elastic limit.
11,400	57,000	.001950	.000150	....	....	
11,600	58,000	.002750	.000800	....	....	
11,800	59,000	.003250	.000500	....	....	
12,000	60,000	.003750	.000500	....	....	
12,400	62,000	.005300	.001550	....	....	
12,800	64,000	.007000	.001700	....	....	
13,200	66,000	.008550	.001550	....	....	
13,600	68,000	.009900	.001350	....	....	
14,000	70,000	.011550	.001650	....	....	
14,400	72,000	.013250	.001700	....	....	
14,800	74,000	.014900	.001650	....	....	
15,200	76,000	.016550	.001650	....	....	
15,600	78,000	.018250	.001700	....	....	
16,000	80,000	.020100	.001850	....	....	
16,400	82,000	.022750	.002650	....	....	
16,800	84,000	.024650	.001900	....	....	
17,200	86,000	.026800	.002150	....	....	
17,600	88,000	.030000	.003200	....	....	
18,000	90,000	.033250	.003250	....	....	
18,400	92,000	.037000	.003750	....	....	
18,800	94,000	.040000	.003000	....	....	
19,200	96,000	.044750	.004750	....	....	
19,600	98,000	.049000	.004250	....	....	
20,000	100,000	.054750	.005750	....	....	
20,400	102,000	.0650	.010250	....	....	
20,800	104,000	.0830	.0200	....	....	
21,140	105,700	.1200	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	**pounds**	**105,700**
Elastic limit per square inch of original section	**do**	**56,000**
Elongation per inch after rupture	**inch**	**0.1600**
Elongation per inch under strain at elastic limit	**do**	**.001800**
Reduction in diameter at point of rupture	**do**	**.075**
Reduction in area after rupture, per centum of original section		**27.4**
Position of rupture		**¼ inch from neck**
Character of broken surface		**granular; dull spot at circumference**

Jacket 5" Steel B. L. Rifle No. 1

Additional specimens



H Ex 31 49 2

No. 2708.

Marks, ${}^{5\,\mathrm{R}_1\,\mathrm{J}}_{\mathrm{B}\,\mathrm{T}_4\,\mathrm{I}}$
Diameter, ".506.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000550	.000200	0.	....	
4,000	20,000	.000700	.000150	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.001050	.000200	.000050	.000050	
7,000	35,000	.001200	.000150	....	....	
8,000	40,000	.001350	.000150	....	....	
8,200	41,000	.001400	.000050	....	....	
8,400	42,000	.001450	.000050	....	....	
8,600	43,000	.001550	.000100	....	....	
8,800	44,000	.001600	.000050	....	....	
9,000	45,000	.001650	.000050	....	....	
9,200	46,000	.001750	.000100	....	....	Elastic limit.
9,400	47,000	.002050	.000300	....	....	
9,600	48,000	.002300	.000250	....	....	
9,800	49,000	.002650	.000350	....	....	
10,000	50,000	.003200	.000550	....	....	
10,200	51,000	.003550	.000350	....	....	
10,400	52,000	.004050	.000500	....	....	
10,600	53,000	.004750	.000700	....	....	
10,800	54,000	.005250	.000500	....	....	
11,000	55,000	.006050	.000800	....	....	
11,200	56,000	.006600	.000550	....	....	
11,600	58,000	.008050	.001450	....	....	
12,000	60,000	.010250	.002200	....	....	
12,400	62,000	.011500	.001250	....	....	
12,800	64,000	.013250	.001750	....	....	
13,200	66,000	.014800	.001550	....	....	
13,600	68,000	.016700	.001900	....	....	
14,000	70,000	.018750	.002050	....	....	
14,400	72,000	.021050	.002300	....	....	
14,800	74,000	.023500	.002450	....	....	
15,200	76,000	.026000	.002500	....	....	
15,600	78,000	.028750	.002750	....	....	
16,000	80,000	.032000	.003250	....	....	
16,400	82,000	.035000	.003000	....	....	
16,800	84,000	.038050	.003050	....	....	
17,200	86,000	.042400	.004350	....	....	
17,600	88,000	.047500	.005100	....	....	
18,000	90,000	.0525	.0050	....	....	
18,400	92,000	.0650	.0125	....	....	
18,800	94,000	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	94,000
Elastic limit per square inch of original section	do...	46,000
Elongation per inch after rupture	inch..	0.0800
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.020
Reduction in area after rupture, per centum of original section		9.5
Position of rupture		".23 from neck
Character of broken surface		granular, flaky streaks; opened cracks in surface of stem
Elongation of inch sections		".06, ".10*

No. 2709.

Marks, $\genfrac{}{}{0pt}{}{\text{5 R, J}}{\text{B T, M}}$
Diameter, ″.506.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000300	.000200	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000800	.000200	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001150	.000150	0.	....	
8,000	40,000	.001350	.000200	0.	....	
8,200	41,000	.001400	.000050	....	....	
8,400	42,000	.001450	.000050	....	....	
8,600	43,000	.001500	.000050	....	....	
8,800	44,000	.001550	.000050	....	....	
9,000	45,000	.001600	.000050	....	....	
9,200	46,000	.001650	.000050	....	....	Elastic limit.
9,400	47,000	.001900	.000250	....	....	
9,600	48,000	.004350	.002450	....	....	
9,800	49,000	.005000	.000650	....	....	
10,000	50,000	.005600	.000600	....	....	
10,400	52,000	.007150	.001550	....	....	
10,800	54,000	.008750	.001600	....	....	
11,200	56,000	.010250	.001500	....	....	
11,600	58,000	.011900	.001650	....	....	
12,000	60,000	.013550	.001650	....	....	
12,400	62,000	.015350	.001800	....	....	
12,800	64,000	.017250	.001900	....	....	
13,200	66,000	.019750	.002500	....	....	
13,600	68,000	.022000	.002250	....	....	
14,000	70,000	.024000	.002000	....	....	
14,400	72,000	.026100	.002100	....	....	
14,800	74,000	.028700	.002600	....	....	
15,200	76,000	.032000	.003300	....	....	
15,600	78,000	.034550	.002550	....	....	
16,000	80,000	.038500	.003950	....	....	
16,400	82,000	.042250	.003750	....	....	
16,800	84,000	.0450	.002750	....	....	
17,200	86,000	.0500	.0050	....	....	
17,600	88,000	.0600	.0100	....	....	
18,000	90,000	.0650	.0050	....	....	
18,400	92,000	.0800	.0150	....	....	
18,800	94,000	.1000	.0.00	....	....	
18,950	94,750	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	94,750
Elastic limit per square inch of original section	do...	46,000
Elongation per inch after rupture	inch..	0.1450
Elongation per inch under strain at elastic limit	do...	.001650
Reduction in diameter at point of rupture	do...	.045
Reduction in area after rupture, per centum of original section		16.9
Position of rupture		″.60 from neck

Character of broken surface, granular; dull flaky spot at the circumference; opened cracks in surface of stem.

Elongation of inch sections .... ″.14, ″.15*

No. 2710.

Marks, $_{2}\frac{5\ R,\ J}{B\ T,\ M}$
Diameter, ″.506.
Sectional area, .20 square inch.

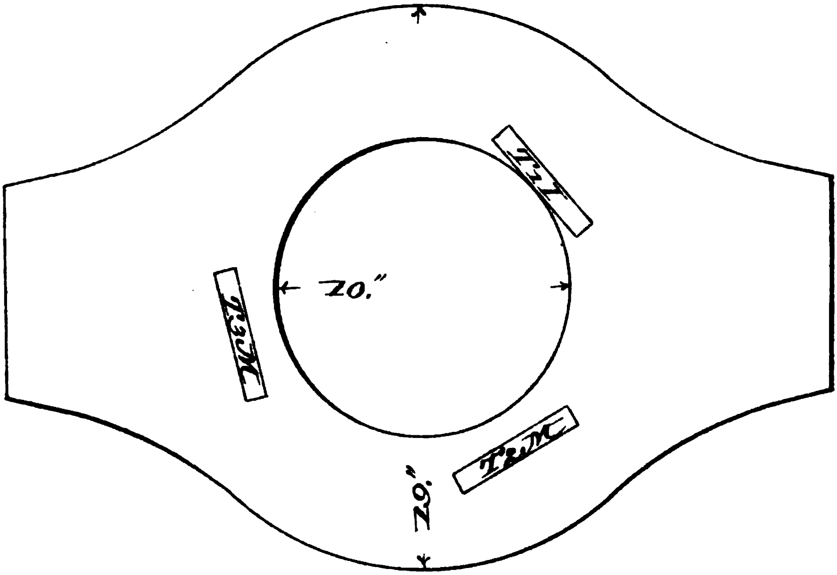
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000650	.000200	0.	....	
5,000	25,000	.000850	.000200	0.	....	
6,000	30,000	.001050	.000200	0.	....	
7,000	35,000	.001200	.000150	0.	....	
8,000	40,000	.001350	.000150	0.	....	
8,200	41,000	.001400	.000050	....	....	
8,400	42,000	.001450	.000050	....	....	
8,600	43,000	.001500	.000050	....	....	
8,800	44,000	.001550	.000050	....	....	
9,000	45,000	.001550	.0	....	....	
9,200	46,000	.001750	.000200	....	....	Elastic limit.
9,400	47,000	.002900	.001150	....	....	
9,600	48,000	.004000	.001100	....	....	
9,800	49,000	.004700	.000700	....	....	
10,000	50,000	.005150	.000450	....	....	
10,400	52,000	.006650	.001500	....	....	
10,800	54,000	.008000	.001350	....	....	
11,200	56,000	.009750	.001750	....	....	
11,600	58,000	.011550	.001800	....	....	
12,000	60,000	.012900	.001350	....	....	
12,400	62,000	.014800	.001900	....	....	
12,800	64,000	.016600	.001800	....	....	
13,200	66,000	.018500	.001900	....	....	
13,600	68,000	.020500	.002000	....	....	
14,000	70,000	.022650	.002150	....	....	
14,400	72,000	.025050	.002400	....	....	
14,800	74,000	.027500	.002450	....	....	
15,200	76,000	.030350	.002850	....	....	
15,600	78,000	.033550	.003200	....	....	
16,000	80,000	.036600	.003050	....	....	
16,400	82,000	.040600	.004000	....	....	
16,800	84,000	.044800	.004200	....	....	
17,200	86,000	.0500	.0052	....	....	
17,600	88,000	.0550	.0050	....	....	
18,000	90,000	.0650	.0100	....	....	
18,400	92,000	.0750	.0100	....	....	
18,800	94,000	.0950	.0200	....	....	
19,080	95,400	.1450	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section.... ....pounds.. 95,400
Elastic limit per square inch of original section.................. ....do... 46,000
Elongation per inch after rupture...inch.. 0.2250
Elongation per inch under strain at elastic limit ....do... .001750
Reduction in diameter at point of rupture...... ....do... .135
Reduction in area after rupture, per centum of original section 46.2
Position of rupture..″.75 from neck
Character of broken surface................. ....silky
Elongation of inch sections..″.11, ″.34*

5" Steel B. L. Rifle No. 1

Trunnion Hoop



No. 2542.

Marks, $^{5}\substack{\text{R}\\\text{T}}\,\substack{\text{T}\\\text{I}}\,\text{H}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000250	.000100	0.	....	
3, 000	15, 000	.000400	.000150	0.	....	
4, 000	20, 000	.000600	.000200	0.	....	
5, 000	25, 000	.000750	.000150	0.	....	
6, 000	30, 000	.000950	.000200	0.	....	
7, 000	35, 000	.001100	.000150	0.	....	
8, 000	40, 000	.001250	.000150	0.	....	
9, 000	45, 000	.001400	.000150	....	....	
9, 200	46, 000	.001450	.000050	....	....	
9, 400	47, 000	.001500	.000050	....	....	
9, 600	48, 000	.001500	0.	....	....	
9, 800	49, 000	.001550	.000050	....	....	
10, 000	50, 000	.001600	.000050	....	....	
10, 200	51, 000	.001600	0.	....	....	
10, 400	52, 000	.001650	.000050	....	....	
10, 600	53, 000	.001700	.000050	....	....	
10, 800	54, 000	.001750	.000050	....	....	
11, 000	55, 000	.001750	0.	....	....	
11, 200	56, 000	.001850	.000100	....	....	Elastic limit.
11, 400	57, 000	.005250	.003400	....	....	
11, 600	58, 000	.005850	.000600	....	....	
11, 800	59, 000	.006600	.000750	....	....	
12, 000	60, 000	.007550	.000950	....	....	
12, 400	62, 000	.009550	.002000	....	....	
12, 800	64, 000	.012000	.002450	....	....	
13, 200	66, 000	.014150	.002150	....	....	
13, 600	68, 000	.016250	.002100	....	....	
14, 000	70, 000	.018250	.002000	....	....	
14, 400	72, 000	.020000	.001750	....	....	
14, 800	74, 000	.021750	.001750	....	....	
15, 200	76, 000	.023000	.001250	....	....	
15, 600	78, 000	.024100	.001100	....	....	
16, 000	80, 000	.026750	.002650	....	....	
16, 400	82, 000	.030600	.003850	....	....	
16, 800	84, 000	.033050	.002450	....	....	
17, 200	86, 000	.036500	.003450	....	....	
17, 600	88, 000	.040600	.004100	....	....	
18, 000	90, 000	.045250	.004650	....	....	
18, 400	92, 000	.0500	.004750	....	....	
18, 800	94, 000	.0550	.0050	....	....	
19, 200	96, 000	.0650	.0100	....	....	
19, 600	98, 000	.0900	.0250	....	....	
19, 900	99, 500	.1350	.0450	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	99, 500
Elastic limit per square inch of original section	do	56, 000
Elongation per inch after rupture	inch	0. 25000
Elongation per inch under strain at elastic limit	do	.001850
Reduction in diameter at point of rupture	do	.155
Reduction in area after rupture, per centum of original section		51. 9
Position of rupture		1 inch from neck
Character of broken surface		fine, silky
Elongation of inch sections		″.34*, ″.1*

No. 2543.

Marks, $^{5\,R_1\,T\,H}_{\;T_2\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000350	.000250	0.	....	
3,000	15,000	.000600	.000250	0.	....	
4,000	20,000	.000700	.000100	0.	....	
5,000	25,000	.000850	.000150	0.	....	
6,000	30,000	.000950	.000100	0.	....	
7,000	35,000	.001100	.000150	0.	....	
8,000	40,000	.001300	.000200	0.	....	
9,000	45,000	.001450	.000150	....	....	
10,000	50,000	.001650	.000200	....	....	
10,200	51,000	.001700	.000050	....	....	
10,400	52,000	.001750	.000050	....	....	
10,600	53,000	.001750	0.	....	....	
10,800	54,000	.001800	.000050	....	....	
11,000	55,000	.001900	.000100	....	....	Elastic limit.
11,200	56,000	.005400	.003500	....	....	
11,400	57,000	.006100	.000700	....	....	
11,600	58,000	.007050	.000950	....	....	
11,800	59,000	.007600	.000550	....	....	
12,000	60,000	.008550	.000950	....	....	
12,400	62,000	.010100	.001550	....	....	
12,800	64,000	.011850	.001750	....	....	
13,200	66,000	.013500	.001650	....	....	
13,600	68,000	.015500	.002000	....	....	
14,000	70,000	.017450	.001950	....	....	
14,400	72,000	.019500	.002050	....	....	
14,800	74,000	.021450	.001950	....	....	
15,200	76,000	.023550	.002100	....	....	
15,600	78,000	.026100	.002550	....	....	
16,000	80,000	.029000	.002900	....	....	
16,400	82,000	.032000	.003000	....	....	
16,800	84,000	.035150	.003150	....	....	
17,200	86,000	.038750	.003600	....	....	
17,600	88,000	.044550	.005850	....	....	
18,000	90,000	.0500	.005450	....	....	
18,400	92,000	.0550	.0050	....	....	
18,800	94,000	.0600	.0050	....	....	
19,200	96,000	.0750	.0150	....	....	
19,600	98,000	.1000	.0250	....	....	
19,820	99,100	.1400	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	99,100
Elastic limit per square inch of original section	do...	55,000
Elongation per inch after rupture	inch..	0.2500
Elongation per inch under strain at elastic limit	3do...	.001900
Reduction in diameter at point of rupture	do...	.155
Reduction in area after rupture, per centum of original section		51.9
Position of rupture		1 inch from neck
Character of broken surface		fine, silky
Elongation of inch sections		″.33*, ″.17

No. 2544.

Marks, $^{5\,B,\ T\,H}_{\quad T,\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

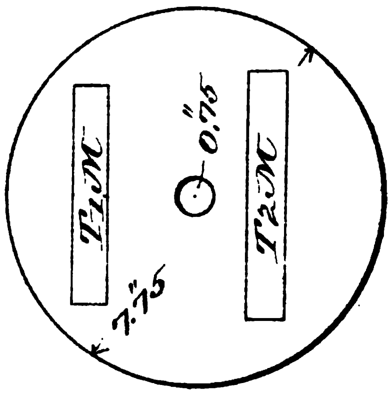
Applied loads.		Elongation per inch,	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000300	.000150	0.	....	
3, 000	15, 000	.000500	.000200	0.	....	
4, 000	20, 000	.000600	.000100	0.	....	
5, 000	25, 000	.000700	.000100	0.	....	
6, 000	30, 000	.000900	.000200	0.	....	
7, 000	35, 000	.001050	.000150	0.	....	
8, 000	40, 000	.001250	.000200	0.	....	
9, 000	45, 000	.001400	.000150	....	....	
10, 000	50, 000	.001550	.000150	....	....	
10, 200	51, 000	.001550	0.	....	....	
10, 400	52, 000	.001600	.000050	....	....	
10, 600	53, 000	.001650	.000050	....	....	
10, 800	54, 000	.001650	0.	....	....	
11, 000	55, 000	.001700	.000050	....	....	
11, 200	56, 000	.001750	.000050	....	....	Elastic limit.
11, 400	57, 000	.001950	.000200	....	....	
11, 600	58, 000	.004100	.002150	....	....	
11, 800	59, 000	.005100	.001000	....	....	
12, 000	60, 000	.006050	.000950	....	....	
12, 400	62, 000	.008000	.001950	....	....	
12, 800	64, 000	.009550	.001550	....	....	
13, 200	66, 000	.011200	.001650	....	....	
13, 600	68, 000	.013050	.001850	....	....	
14, 000	70, 000	.015000	.001950	....	....	
14, 400	72, 000	.017000	.002000	....	....	
14, 800	74, 000	.019000	.002000	....	....	
15, 200	76, 000	.020850	.001850	....	....	
15, 600	78, 000	.023100	.002250	....	....	
16, 000	80, 000	.025600	.002500	....	....	
16, 400	82, 000	.028250	.002650	....	....	
16, 800	84, 000	.031250	.003000	....	....	
17, 200	86, 000	.034150	.002900	....	....	
17, 600	88, 000	.038500	.004350	....	....	
18, 000	90, 000	.043100	.004600	....	....	
18, 400	92, 000	.048750	.005650	....	....	
18, 800	94, 000	.0550	.006250	....	....	
19, 200	96, 000	.0600	.0050	....	....	
19, 600	98, 000	.0750	.0150	....	....	
20, 000	100, 000	.1050 .1250	.0300 .0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	100, 000
Elastic limit per square inch of original section	do...	56, 000
Elongation per inch after rupture	inch..	0. 2250
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.015
Reduction in area after rupture, per centum of original section		40. 3
Position of rupture		1″.1 from neck
Character of broken surface		silky; interspersed with granulation
Elongation of inch sections		″.24*, ″.21

5" Steel B. L. Rifle No. 1

Breech Block



No. 2529.

Marks, $^{5}\overset{R_1\,B\,B}{T_1\,M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000450	.000150	0.	....	
4,000	20,000	.000600	.000150	0.	....	
5,000	25,000	.000750	.000150	0.	....	
6,000	30,000	.000900	.000150	0.	....	
7,000	35,000	.001100	.000200	0.	....	
8,000	40,000	.001250	.000150	0.	....	
9,000	45,000	.001450	.000200	....	....	
10,000	50,000	.001600	.000150	....	....	
10,200	51,000	.001650	.000050	....	....	
10,400	52,000	.001700	.000050	....	....	
10,600	53,000	.001750	.000050	....	....	
10,800	54,000	.001800	.000050	....	....	
11,000	55,000	.001850	.000050	....	....	
11,200	56,000	.001900	.000050	....	....	Elastic limit.
11,400	57,000	.002150	.000250	....	....	
11,600	58,000	.002800	.000650	....	....	
11,800	59,000	.003700	.000900	....	....	
12,000	60,000	.004700	.001000	....	....	
12,400	62,000	.006250	.001550	....	....	
12,800	64,000	.007950	.001700	....	....	
13,200	66,000	.009500	.001550	....	....	
13,600	68,000	.011250	.001750	....	....	
14,000	70,000	.012850	.001600	....	....	
14,400	72,000	.014600	.001750	....	....	
14,800	74,000	.016500	.001900	....	....	
15,200	76,000	.018500	.002000	....	....	
15,600	78,000	.020600	.002100	....	....	
16,000	80,000	.022500	.001900	....	....	
16,400	82,000	.025000	.002500	....	....	
16,800	84,000	.027600	.002600	....	....	
17,200	86,000	.030000	.002400	....	....	
17,600	88,000	.034000	.004000	....	....	
18,000	90,000	.038000	.004000	....	....	
18,400	92,000	.042500	.004500	....	....	
18,800	94,000	.047000	.004500	....	....	
19,200	96,000	.0550	.0080	....	....	
19,600	98,000	.0650	.0100	....	....	
20,000	100,000	.0700	.0050	....	....	
20,400	102,000	.0950	.0250	....	....	
20,500	102,500	.1150	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	102,500
Elastic limit per square inch of original section	do	56,000
Elongation per inch after rupture	inch	0.2050
Elongation per inch under strain at elastic limit	do	.001900
Reduction in diameter at point of rupture	do	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		1″.05 from neck
Character of broken surface		granular, 40 per centum; silky, 60 per centum
Elongation of inch sections		″.17, ″.24*

No. 656.

Marks, $^{5\,\mathrm{R},\,\mathrm{B\,B}}_{\quad\mathrm{T},\,\mathrm{M}}$
Length, 4″.502.
Diameter, ″.798.
Sectional area, .50 square inch.

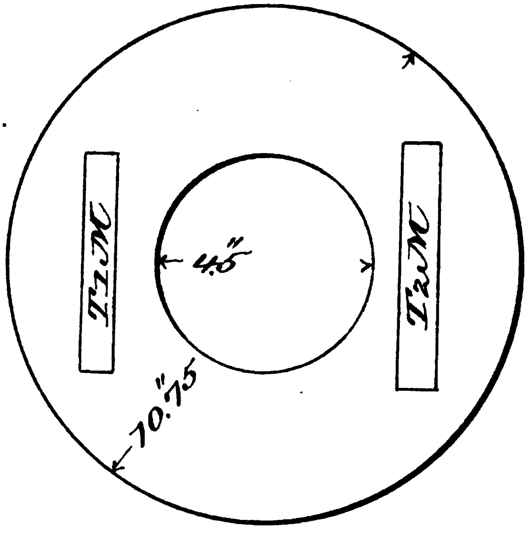
Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	**Initial load.**
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000267	.000167	0.	....	
7, 500	15, 000	.000433	.000166	0.	....	
10, 000	20, 000	.000600	.000167	0.	....	
12, 500	25, 000	.000733	.000133	0.	....	
15, 000	30, 000	.000867	.000134	0.	....	
17, 500	35, 000	.001067	.000200	....	....	
20, 000	40, 000	.001267	.000200	....	....	
22, 500	45, 000	.001433	.000166	....	....	
25, 000	50, 000	.001600	.000167	....	....	
25, 500	51, 000	.001667	.000067	....	....	
26, 000	52, 000	.001667	0.	....	....	
26, 500	53, 000	.001733	.000066	....	....	
27, 000	54, 000	.001767	.000034	....	....	
27, 500	55, 000	.001733	− .000034	....	....	**Elastic limit.**
28, 000	56, 000	.001867	.000134	....	....	
28, 500	57, 000	.002267	.000400	....	....	
29, 000	58, 000	.002933	.000666	....	....	
29, 500	59, 000	.003500	.000567	....	....	
30, 000	60, 000	.004033	.000533	....	....	
51, 050	102, 100	....	....	....	....	**Ultimate strength.**

General summary.

Elastic limit per square inch of original section	pounds..	55, 000
Compression per inch under stress at elastic limit	inch..	0. 001733
Ultimate strength per square inch of original section	pounds..	102, 100
Manner of failure		triple flexure

5" Steel B. L. Rifle No. 1

Base Ring



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No. 2526.

Marks, $^{5}\frac{R_{1}\ B\ R}{T_{1}\ M}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000550	.000200	0.	....	
4,000	20,000	.000700	.000150	0.	....	
5,000	25,000	.000800	.000100	0.	....	
6,000	30,000	.001000	.000200	0.	....	
7,000	35,000	.001200	.000200	....	....	
8,000	40,000	.001400	.000200	....	....	
9,000	45,000	.001550	.000150	....	....	
10,000	50,000	.001700	.000150	....	....	
10,200	51,000	.001750	.000050	....	....	
10,400	52,000	.001750	0.	....	....	
10,600	53,000	.001800	.000050	....	....	
10,800	54,000	.001850	.000050	....	....	
11,000	55,000	.001950	.000100	....	....	
11,200	56,000	.002050	.000100	....	....	
11,400	57,000	.002100	.000050	....	....	
11,600	58,000	.002200	.000100	....	....	Elastic limit.
11,800	59,000	.002500	.000300	....	....	
12,000	60,000	.002900	.000400	....	....	
12,400	62,000	.004550	.001650	....	....	
12,800	64,000	.006200	.001650	....	....	
13,200	66,000	.007500	.001300	....	....	
13,600	68,000	.008750	.001250	....	....	
14,000	70,000	.010500	.001750	....	....	
14,400	72,000	.012000	.001500	....	....	
14,800	74,000	.013750	.001750	....	....	
15,200	76,000	.015350	.001600	....	....	
15,600	78,000	.017100	.001750	....	....	
16,000	80,000	.019000	.001900	....	....	
16,400	82,000	.020800	.001800	....	....	
16,800	84,000	.023050	.002250	....	....	
17,200	86,000	.025000	.001950	....	....	
17,600	88,000	.027600	.002600	....	....	
18,000	90,000	.030600	.003000	....	....	
18,400	92,000	.033500	.002900	....	....	
18,800	94,000	.036250	.002750	....	....	
19,200	96,000	.040000	.003750	....	....	
19,600	98,000	.044550	.004550	....	....	
20,000	100,000	.050000	.005450	....	....	
20,400	102,000	.056250	.006250	....	....	
20,800	104,000	.0650	.008750	....	....	
21,200	106,000	.0850	.0200	....	....	
21,400	107,000	.1200	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	107,000
Elastic limit per square inch of original section	do...	58,000
Elongation per inch after rupture	inch .	0.1950
Elongation per inch under strain at elastic limit	do...	.002200
Reduction in diameter at point of rupture	do...	.095
Reduction in area after rupture, per centum of original section		34.0
Position of rupture		¾ inch from neck
Character of broken surface		granular; dull silky center
Elongation of inch sections		″.25*, ″.14

No. 655.

Marks, $\genfrac{}{}{0pt}{}{5\,R_1\,B\,R}{T_2\,M}$
Length, 4''.504.
Diameter, ''.798.
Sectional area, .50 square inch.

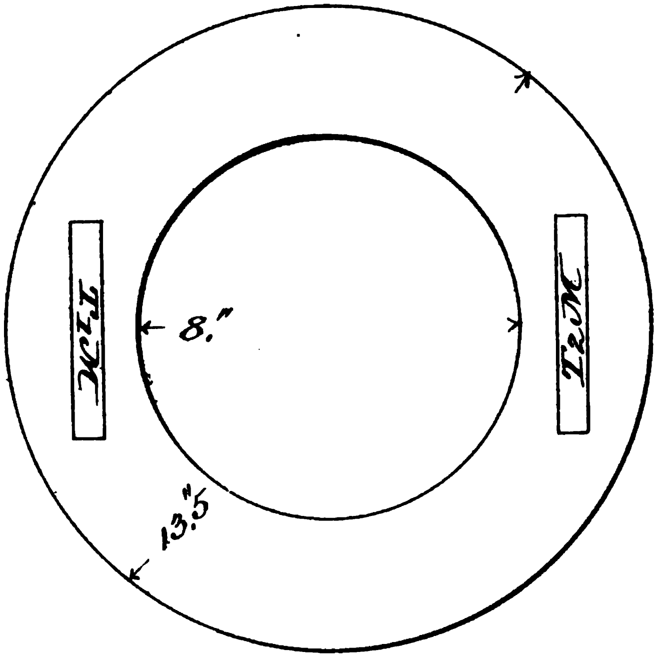
Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000233	.000133	0.	....	
7,500	15,000	.000367	.000134	0.	....	
10,000	20,000	.000533	.000166	0.	....	
12,500	25,000	.000700	.000167	0.	....	
15,000	30,000	.000867	.000167	0.	....	
17,500	35,000	.001067	.000200	....	....	
20,000	40,000	.001233	.000166	....	....	
22,500	45,000	.001367	.000134	....	....	
25,000	50,000	.001500	.000133	....	....	
25,500	51,000	.001567	.000067	....	....	
26,000	52,000	.001667	.000100	....	....	
26,500	53,000	.001700	.000034	....	....	
27,000	54,000	.001733	.000033	....	....	
27,500	55,000	.001833	.000100	....	....	
28,000	56,000	.001867	.000034	....	....	
28,500	57,000	.001900	.000033	....	....	Elastic limit.
29,000	58,000	.002033	.000133	....	....	
29,500	59,000	.002133	.000100	....	....	
30,000	60,000	.002533	.000400	....	....	
30,500	61,000	.003467	.000934	....	....	
31,000	62,000	.004000	.000533	....	....	
31,500	63,000	.004600	.000600	....	....	
32,000	64,000	.005333	.000733	....	....	
52,400	104,800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	57,000
Compression per inch under stress at elastic limit	inch..	0.001900
Ultimate strength per square inch of original section	pounds..	104,800
Manner of failure		triple flexure

5" Steel B. L. Rifle No. 1

Sleeve



No. 2527.

Marks, $^{5\,R_1\,S}_{T_1\,M}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000550	.000200	0.	....	
4,000	20,000	.000750	.000200	0.	....	
5,000	25,000	.000950	.000200	0.	....	
6,000	30,000	.001100	.000150	0.	....	
7,000	35,000	.001300	.000200	.000050	.000050	
8,000	40,000	.001450	.000150	.000050	0.	
9,000	45,000	.001550	.000100	....	....	
10,000	50,000	.001750	.000200	....	....	
10,200	51,000	.001850	.000100	....	....	Elastic limit.
10,400	52,000	.002000	.000150	....	....	
10,600	53,000	.002150	.000150	....	....	
10,800	54,000	.003050	.000900	....	....	
11,000	55,000	.004200	.001150	....	....	
11,200	56,000	.004900	.000700	....	....	
11,400	57,000	.006000	.001100	....	....	
11,600	58,000	.006750	.000750	....	....	
11,800	59,000	.007550	,000800	....	....	
12,000	60,000	.008500	.000950	....	....	
12,400	62,000	.010000	.001500	....	....	
12,800	64,000	.011650	.001650	....	....	
13,200	66,000	.013600	.001950	....	....	
13,600	68,000	.015250	.001650	....	....	
14,000	70,000	.017050	.001800	....	....	
14,400	72,000	.019000	.001950	....	....	
14,800	74,000	.021000	.002000	....	....	
15,200	76,000	.023050	.002050	....	....	
15,600	78,000	.025550	.002500	....	....	
16,000	80,000	.028200	.002650	....	....	
16,400	82,000	.031250	.003050	....	....	
16,800	84,000	.034250	.003000	....	....	
17,200	86,000	.038000	.003750	....	....	
17,600	88,000	.042050	.004050	....	....	
18,000	90,000	.047150	.005100	....	....	
18,400	92,000	.0550	.005850	....	....	
18,800	94,000	.0600	.0050	....	....	
19,200	96,000	.0750	.0150	....	....	
19,600	98,000	.1000	.0250	....	....	
19,780	98,900	.1500	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	98,900
Elastic limit per square inch of original section	do...	51,000
Elongation per inch after rupture	inch..	0.2450
Elongation per inch under strain at elastic limit	do...	.001850
Reduction in diameter at point of rupture	do...	.135
Reduction in area after rupture, per centum of original section		46.2
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		".26*, ".23*

No. 2528.

Marks, $^{5\,R\,S}_{T,\,M}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	. 000100	. 000100	0.	....	
2, 000	10, 000	. 000250	. 000150	0.	....	
3, 000	15, 000	. 000450	. 000200	0.	....	
4, 000	20, 000	. 000600	. 000150	0.	....	
5, 000	25, 000	. 000800	. 000200	0.	....	
6, 000	30, 000	. 001000	. 000200	0.	....	
7, 000	35, 000	. 001100	. 000100	0.	....	
8, 000	40, 000	. 001250	. 000150	0.	....	
9, 000	45, 000	. 001450	. 000200	....	....	
10, 000	50, 000	. 001600	. 000150	....	....	
10, 200	51, 000	. 001650	. 000050	....	....	
10, 400	52, 000	. 001700	. 000050	....	....	
10, 600	53, 000	. 001750	. 000050	....	....	
10, 800	54, 000	. 001800	. 000050	....	....	
11, 000	55, 000	. 001850	. 000050	....	....	Elastic limit.
11, 200	56, 000	. 002000	. 000150	....	....	
11, 400	57, 000	. 002250	. 000250	....	....	
11, 600	58, 000	. 002850	. 000600	....	....	
11, 800	59, 000	. 003650	. 000800	....	....	
12, 000	60, 000	. 004350	. 000700	....	....	
12, 400	62, 000	. 006250	. 001900	....	....	
12, 800	64, 000	. 007500	. 001250	....	....	
13, 200	66, 000	. 009500	. 002000	....	....	
13, 600	68, 000	. 011000	. 001500	....	....	
14, 000	70, 000	. 012700	. 001700	....	....	
14, 400	72, 000	. 014250	. 001550	....	....	
14, 800	74, 000	. 016000	. 001750	....	....	
15, 200	76, 000	. 018000	. 002000	....	....	
15, 600	78 000	. 019750	. 001750	....	....	
16, 000	80, 000	. 021750	. 002000	....	....	
16, 400	82, 000	. 024000	. 002250	....	....	
16, 800	84, 000	. 026250	. 002250	....	....	
17, 200	86, 000	. 029000	. 002750	....	....	
17, 600	88, 000	. 032000	. 003000	....	....	
18, 000	90, 000	. 035000	. 003000	....	....	
18, 400	92, 000	. 038500	. 003500	....	....	
18, 800	94, 000	. 043500	. 005000	....	....	
19, 200	96, 000	. 048250	. 004750	....	....	
19, 600	98, 000	. 0550	. 006750	....	....	
20, 000	100, 000	. 0650	. 0100	....	....	
20, 400	102, 000	. 0750	. 0100	....	....	
20, 790	103, 950	. 1150	. 0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	103, 950
Elastic limit per square inch of original section	do...	55, 000
Elongation per inch after rupture	inch..	0. 2300
Elongation per inch under strain at elastic limit	do...	. 001850
Reduction in diameter at point of rupture	do...	. 125
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		".95 from neck
Character of broken surface		silky
Elongation of inch sections		".17, ".29

OBTURATOR STEM.

No. 654.

Marks, $5\,\overset{R_1}{L_1}\,O\,S$
Length, 4''.504.
Diameter, ''.798
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000067	.000067	— .000033	— .000033	
5,000	10,000	.000233	.000166	— .000033	0.	
7,500	15,000	.000400	.000167	— .000067	— .000034	
10,000	20,000	.000567	.000167	— .000067	0.	
12,500	25,000	.000767	.000200	— .000067	0.	
15,000	30,000	.000900	.000133	— .000067	0.	
17,500	35,000	.001067	.000167	....	....	
20,000	40,000	.001233	.000166	....	....	
22,500	45,000	.001400	.000167	....	....	
25,000	50,000	.001533	.000133	....	....	
25,500	51,000	.001567	.000034	....	....	
26,000	52,000	.001600	.000033	....	....	
26,500	53,000	.001633	.000033	....	....	
27,000	54,000	.001667	.000034	....	....	
27,500	55,000	.001667	0.	....	....	
28,000	56,000	.001667	0.	....	....	
28,500	57,000	.001667	0.	....	....	
29,000	58,000	.001700	.000033	....	....	
29,500	59,000	.001667	— .000033	....	....	Elastic limit.
30,000	60,000	.002933	.001266	....	....	
30,500	61,000	.004267	.001334	....	....	
31,000	62,000	.005367	.001100	....	....	
31,500	63,000	.006200	.000833	....	....	
32,000	64,000	.007867	.001667	....	....	
50,800	101,600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	59,000
Compression per inch under stress at elastic limit,	inch..	0.001667
Ultimate strength per square inch of original section	pounds..	101,600
Manner of failure		triple flexure

TABULATION OF TENSION SPECIMENS FROM 5-INCH STEEL B. L. RIFLE NO. 1.

Number of test.	Position in gun.	Location of specimens.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.
			Pounds.	*Pounds.*	*Per ct.*	*Per ct.*	
2530	Tube	Middle	42,000	79,000	29.5	51.9	Silky.
2531	....do	..do	42,000	80,050	26.5	54.6	Do.
2532	....do	..do	42,000	83,050	20.5	34.0	Granular, 65 per cent.; silky, 35 per cent.
2533	....do	..do	42,000	82,850	24.5	46.2	Silky.
2551	Jacket	Inside	48,000	93,600	6.5	9.5	Granular; line of flaky metal.
2552	....do	Middle	45,000	95,600	22.5	43.3	Silky.
2553	....do	..do	55,000	106,550	18.5	27.4	Granular; dull spot.
2554	....do	..do	56,000	105,700	16.0	27.4	Do.
*2708	....do	Inside	46,000	94,000	8.0	9.5	Granular; flaky streaks.
*2709	...do	Middle	46,000	94,750	14.5	16.9	Granular; dull flaky spot.
*2710	.. do	..do	46,000	95,400	22.5	46.2	Silky.
2542	Trunnion hoop	Inside	56,000	99,500	25.0	51.9	Fine, silky.
2543	....do	Middle	55,000	99,100	25.0	51.9	Do.
2544	....do	..do	56,000	100,000	22.5	40.3	Silky, interspersed with granular.
2529	Breech-block	..do	56,000	102,500	20.5	34.0	Granular, 40 per cent.; silky, 60 per cent.
2526	Base ring	..do	58,000	107,000	19.5	34.0	Granular; dull silky center.
2527	Sleeve	..do	51,000	98,900	24.5	46.2	Silky.
2528	....do	..do	55,000	103,950	23.0	43.3	Do.

*Additional specimen.

TABULATION OF COMPRESSION SPECIMENS FROM 5-INCH STEEL B. L. RIFLE NO. 1.

Number of tests.	Position in gun.	Location of specimens.	Elastic limit per square inch.	Ultimate strength per square inch.	Manner of failure.
			Pounds.	*Pounds.*	
657	Tube	Middle	45,000	80,760	Triple flexure.
659	Jacket	....do	46,000	91,320	Do.
656	Breech-block	....do	55,000	102,100	Do.
655	Base ring	....do	57,000	104,800	Do.
654	Obturator stem	.....	59,000	101,600	Do.

8-INCH STEEL B. L. RIFLE NO. 1.

STEEL SPECIMENS

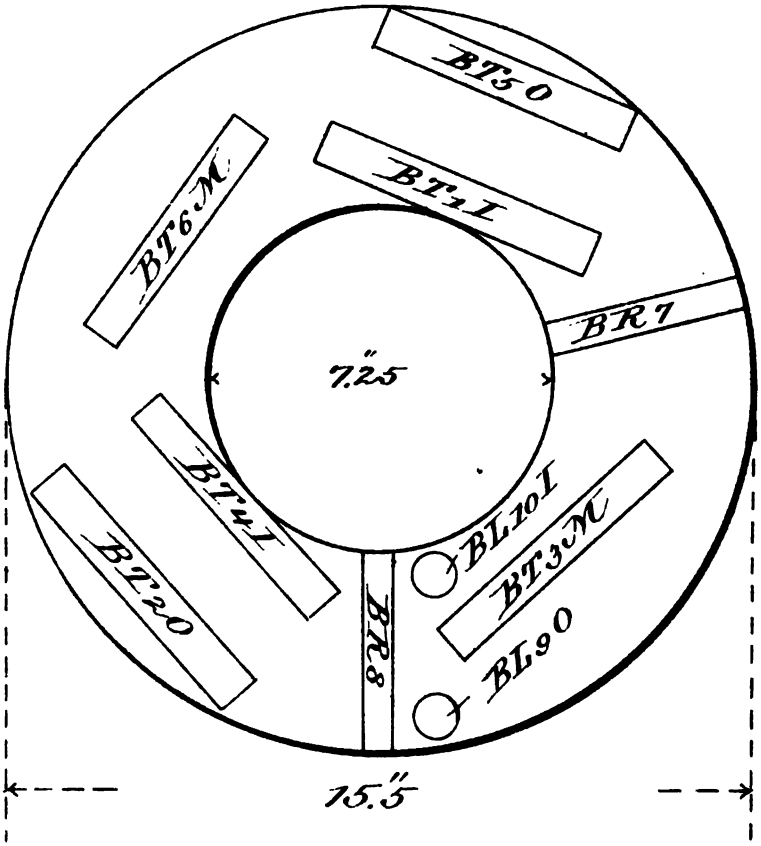
FROM

TUBE, TRUNNION-HOOP, AND COUPLING-PIN.

8" Steel B.L. Rifle No.1.

Tube

Breech end



SPECIMENS FROM 8-INCH STEEL B. L. RIFLE NO. 1.

TUBE.

No. 2335.

Marks, $^{8\,R_1\,T}_{B\,T_1\,I}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000300	.000133	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000600	.000133	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	0.	....	
10,000	40,000	.001300	.000200	.000067	.000067	Elastic limit.
10,250	41,000	.001500	.000200	....	....	
10,500	42,000	.002033	.000533	....	....	
10,750	43,000	.002600	.000567	....	....	
11,000	44,000	.004833	.002233	....	....	
11,250	45,000	.005767	.000934	....	....	
11,500	46,000	.007000	.001233	....	....	
11,750	47,000	.007933	.000933	....	....	
12,000	48,000	.009067	.001134	....	....	
12,250	49,000	.009933	.000866	....	....	
12,500	50,000	.011333	.001400	....	....	
13,000	52,000	.013367	.002034	....	....	
13,500	54,000	.015833	.002466	....	....	
14,000	56,000	.018433	.002600	....	....	
14,500	58,000	.021433	.003000	....	....	
15,000	60,000	.024500	.003067	....	....	
15,500	62,000	.028000	.003500	....	....	
16,000	64,000	.031500	.003500	....	....	
16,500	66,000	.035500	.004000	....	....	
17,000	68,000	.040333	.004833	....	....	
17,500	70,000	.046000	.005667	....	....	
18,000	72,000	.053167	.007167	....	....	
18,500	74,000	.061667	.008500	....	....	
19,000	76,000	.0733	.011633	....	....	
19,500	78,000	.0967	.0234	....	....	
19,940	79,760	.1533	.0566	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	79,760
Elastic limit per square inch of original section	do	40,000
Elongation per inch after rupture	inch	0.2267
Elongation per inch under strain at elastic limit	do	.001300
Reduction in diameter at point of rupture	do	.155
Reduction in area after rupture, per centum of original section		47.2
Position of rupture		″.80 from neck
Character of broken surface		silky
Elongation of inch sections		″.12, ″.17, ″.39

No. 2336.

Marks, $\overset{S\ R_1\ T}{B\ T_2\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
8, 750	15, 000	.000467	.000134	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 560	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
10, 000	40, 000	.001300	.000167	0.	....	
10, 250	41, 000	.001333	.000033	....	....	
10, 500	42, 000	.001400	.000067	....	....	
10, 750	43, 000	.001433	.000033	....	....	
11, 000	44, 000	.001467	.000034	....	....	Elastic limit.
11, 250	45, 000	.001767	.000300	....	....	
11, 500	46, 000	.003567	.001800	....	....	
11, 750	47, 000	.004500	.000933	....	....	
12, 000	48, 000	.005800	.001300	....	....	
12, 250	49, 000	.006800	.001000	....	....	
12, 500	50, 000	.008067	.001267	....	....	
13, 000	52, 000	.009833	.001766	....	....	
13, 500	54, 000	.012033	.002200	....	....	
14, 000	56, 000	.014167	.002134	....	....	
14, 500	58, 000	.016333	.002166	....	....	
15, 000	60, 000	.018833	.002500	....	....	
15, 500	62, 000	.021500	.002667	....	....	
16, 000	64, 000	.024400	.002900	....	....	
16, 500	66, 000	.027500	.003100	....	....	
17, 000	68, 000	.031000	.003500	....	....	
17, 500	70, 000	.035033	.004033	....	....	
18, 000	72, 000	.039700	.004667	....	....	
18, 500	74, 000	.045500	.005800	....	....	
19, 000	76, 000	.052000	.006500	....	....	
19, 500	78, 000	.060667	.008667	....	....	
20, 000	80, 000	.0700	.009333	....	....	
20, 500	82, 000	.0967	.0267	....	....	
20, 860	83, 440	.1367	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................pounds.. 83, 440
Elastic limit per square inch of original section....................do... 44, 000
Elongation per inch after rupture....................inch.. 0. 2267
Elongation per inch under strain at elastic limit....................do... .001467
Reduction in diameter at point of rupture....................do... .164
Reduction in area after rupture, per centum of original section.................... 49. 7
Position of rupture....................1″.30 from neck
Character of broken surface....................silky; trace of granulation
Elongation of inch sections....................″.34 ″.23, ″.11

No. 2337.

Marks, $\substack{8\ \text{R, T}\\ \text{B T, M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000533	.000200	0.	....	
5, 000	20, 000	.000700	.000167	0.	....	
6, 250	25, 000	.000833	.000133	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
8, 750	35, 000	.001167	.000167	0.	....	
10, 000	40, 000	.001400	.000233	.000033	.000033	
10, 250	41, 000	.001433	.000033	....	....	
10, 500	42, 000	.001467	.000034	....	....	
10, 750	43, 000	.001533	.000066	....	....	Elastic limit.
11, 000	44, 000	.001667	.000134	....	....	
11, 250	45, 000	.003000	.001333	....	....	
11, 500	46, 000	.004100	.001100	....	....	
11, 750	47, 000	.005067	.000967	....	....	
12, 000	48, 000	.006400	.001333	....	....	
12, 250	49, 000	.007267	.000867	....	....	
12, 500	50, 000	.008333	.001066	....	....	
13, 000	52, 000	.010200	.001867	....	....	
13, 500	54, 000	.012367	.002167	....	....	
14, 000	56, 000	.014667	.002300	....	....	
14, 500	58, 000	.016833	.002166	....	....	
15, 000	60, 000	.019333	.002500	....	....	
15, 500	62, 000	.021833	.002500	....	....	
16, 000	64, 000	.024700	.002867	....	....	
16, 500	66, 000	.028167	.003467	....	....	
17, 000	68, 000	.031667	.003500	....	....	
17, 500	70, 000	.035833	.004166	....	....	
18, 000	72, 000	.040000	.004167	....	....	
18, 500	74, 000	.045500	.005500	....	....	
19, 000	76, 000	.052000	.006500	....	....	
19, 500	78, 000	.060000	.008000	....	....	
20, 000	80, 000	.0733	.0133	....	....	
20, 500	82, 000	.0967	.0234	....	....	
20, 850	83, 400	.1400	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	83, 400
Elastic limit per square inch of original section	do...	43, 000
Elongation per inch after rupture	inch..	0. 2300
Elongation per inch under strain at elastic limit	do...	.001533
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		at middle of stem
Character of broken surface		silky; slightly granular
Elongation of inch sections		″.13, ″.41*, ″.15

No. 638.

Marks, $\frac{8\ R,\ T}{B\ T_4\ I}$
Length, 5''.002.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000133	.000133	0.	....	
5,000	10,000	.000333	.000200	0.	....	
7,500	15,000	.000500	.000167	0.	....	
10,000	20,000	.000667	.000167	.000033	.000033	
12,500	25,000	.000900	.000233	.000100	.000067	
15,000	30,000	.001100	.000200	.000133	.000033	
17,500	35,000	.001267	.000167	.000167	.000034	
18,000	36,000	.001300	.000033	....	....	
18,500	37,000	.001333	.000033	....	....	
19,000	38,000	.001367	.000034	....	....	
19,500	39,000	.001400	.000033	....	....	Elastic limit.
20,000	40,000	.001533	.000133	.000300	.000133	
20,500	41,000	.005200	.003667	....	....	
21,000	42,000	.006300	.001100	....	....	
21,500	43,000	.007233	.000933	....	....	
22,000	44,000	.008133	.000900	....	....	
35,180	70,360	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	39,000
Compression per inch under stress at elastic limit	inch..	0.001400
Ultimate strength per square inch of original section	pounds..	70,360
Manner of failure		triple flexure

No. 637.

Marks, $\frac{8\ E_1\ T}{B\ T_1\ O}$
Length, 4″.998.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000033	.000033	— .000033	— .000033	
5, 000	10, 000	.000167	.000134	— .000033	0.	
7, 500	15, 000	.000300	.000133	— .000033	0.	
10, 000	20, 000	.000467	.000167	— .000033	0.	
12, 500	25, 000	.000667	.000200	0.	.000033	
15, 000	30, 000	.000833	.000166	0.	....	
17, 500	35, 000	.001000	.000167	0.	....	
20, 000	40, 000	.001200	.000200	0.	....	
20, 500	41, 000	.001233	.000033	....	....	
21, 000	42, 000	.001300	.000067	....	....	
21, 500	43, 000	.001333	.000033	....	....	
22, 000	44, 000	.001400	.000067	....	....	
22, 500	45, 000	.001433	.000033	0.	....	
23, 000	46, 000	.001467	.000034	....	....	
23, 500	47, 000	.001500	.000033	....	....	Elastic limit.
24, 000	48, 000	.002133	.000633	....	....	
24, 500	49, 000	.004000	.001867	....	....	
25, 000	50, 000	.005233	.001233	.003267	.003267	
40, 650	81, 300	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	47, 000
Compression per inch under stress at elastic limit	inch..	0. 001500
Ultimate strength per square inch of original section	pounds..	81, 300
Manner of failure		triple flexure

No. 639.

Marks, $\begin{smallmatrix}8\ R_1\ T\\ B\ T_6\ M\end{smallmatrix}$
Length, 4″.992.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.		
5, 000	10, 000	.000267	.000167	0.		
7, 500	15, 000	.000433	.000166	0.		
10, 000	20, 000	.000600	.000167	0.		
12, 500	25, 000	.000767	.000167	.000033	.000033	
15, 000	30, 000	.000967	.000200	.000067	.000034	
17, 500	35, 000	.001167	.000200	.000067	0.	
18, 000	36, 000	.001233	.000066			
18, 500	37, 000	.001300	.000067			
19, 000	38, 000	.001367	.000067			
19, 500	39, 000	.001433	.000066			
20, 000	40, 000	.001500	.000067	.000167	.000100	Elastic limit.
20, 500	41, 000	.001633	.000133			
21, 000	42, 000	.005533	.003900			
21, 500	43, 000	.006767	.001234			
22, 000	44, 000	.007833	.001066			
36, 420	72, 840					Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	40, 000
Compression per inch under stress at elastic limit	inch..	0. 001500
Ultimate strength per square inch of original section	pounds..	72, 840
Manner of failure		triple flexure

No. 642.

Marks, $^{8\,R_1\,T}_{\;\;B\;R_7}$
Length, 4''.004.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000150	.000150	0.	....	
5, 000	10, 000	.000400	.000250	0.	....	
7, 500	15, 000	.000550	.000150	0.	....	
10, 000	20, 000	.000700	.000150	0.	....	
12, 500	25, 000	.000850	.006150	0.	....	
15, 000	30, 000	.001000	.000150	0.	....	
17, 500	35, 000	.001150	.000150	0.	....	
20, 000	40, 000	.001300	.000150	0.	....	
20, 500	41, 000	.001350	.000050	....	....	
21, 000	42, 000	.001400	.000050	....	....	
21, 500	43, 000	.001400	0.	....	....	
22, 000	44, 000	.001450	.000050	....	....	Elastic limit.
22, 500	45, 000	.002100	.000650	....	....	
23, 000	46, 000	.002850	.000750	....	....	
23, 500	47, 000	.003750	.000900	....	....	
24, 000	48, 000	.004400	.000650	....	....	
24, 500	49, 000	.005400	.001000	....	....	
25, 000	50, 000	.006550	.001150	....	....	
46, 850	93, 700	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	44, 000
Compression per inch under stress at elastic limit	inch..	0. 001450
Ultimate strength per square inch of original section	pounds..	93, 700
Manner of failure		triple flexure

No. 643.

Marks, $\overset{8\,R_1\,T}{B\,R_2}$
Length, 4''.003.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000250	.000100	0.	....	
7,500	15,000	.000400	.000150	0.	....	
10,000	20,000	.000600	.000200	0.	....	
12,500	25,000	.000750	.000150	0.	....	
15,000	30,000	.000900	.000150	0.	....	
17,500	35,000	.001100	.000300	0.	....	
20,000	40,000	.001250	.000150	.000050	.0000050	
20,500	41,000	.001300	.000050	....	....	
21,000	42,000	.001300	0.	....	....	Elastic limit.
21,500	43,000	.002000	.000700	....	....	
22,000	44,000	.002900	.000900	....	....	
22,500	45,000	.003450	.000550	....	....	
23,000	46,000	.004350	.000900	....	....	
23,500	47,000	.005550	.001200	....	....	
24,000	48,000	.006250	.000700	....	....	
24,500	49,000	.006950	.000700	....	....	
25,000	50,000	.007800	.000850	....	....	
44,940	89,880	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	42,000
Compression per inch under stress at elastic limit	inch..	0.001300
Ultimate strength per square inch of original section	pounds..	89,880
Manner of failure		triple flexure

No. 2338.

Marks, $\begin{smallmatrix} 8 & R_1 & T \\ B & L_0 & O \end{smallmatrix}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000100	0.	....	
2, 000	10, 000	.000350	.000200	0.	....	
3, 000	15, 000	.000550	.000200	0.	....	
4, 000	20, 000	.000700	.000150	0.	....	
5, 000	25, 000	.000850	.000150	0.	....	
6, 000	30, 000	.001000	.000150	0.	....	
7, 000	35, 000	.001150	.000150	0.	....	
8, 000	40, 000	.001300	.000150	0.	....	
8, 200	41, 000	.001350	.000050	....	....	
8, 400	42, 000	.001400	.000050	....	....	
8, 600	43, 000	.001450	.000050	....	....	
8, 800	44, 000	.001500	.000050	....	....	
9, 000	45, 000	.001500	0.	0.	....	
9, 200	46, 000	.001550	.000050	....	....	
9, 400	47, 000	.001550	0.	....	....	
9, 600	48, 000	.001600	.000050	....	....	
9, 800	49, 000	.001650	.000050	....	....	Elastic limit.
10, 000	50, 000	.002900	.001250	....	....	
10, 200	51, 000	.004250	.001350	....	....	
10, 400	52, 000	.005000	.000750	....	....	
10, 600	53, 000	.006000	.001000	....	....	
10, 800	54, 000	.007000	.001000	....	....	
11, 000	55, 000	.007900	.000900	....	....	
11, 200	56, 000	.008750	.000850	....	....	
11, 400	57, 000	.009750	.001000	....	....	
11, 600	58, 000	.010500	.000750	....	....	
11, 800	59, 000	.011900	.001400	....	....	
12, 000	60, 000	.012750	.000850	....	....	
12, 400	62, 000	.014750	.002000	....	....	
12, 800	64, 000	.017000	.002250	....	....	
13, 200	66, 000	.019250	.002250	....	....	
13, 600	68, 000	.021750	.002500	....	....	
14, 000	70, 000	.025000	.003250	....	....	
14, 400	72, 000	.028500	.003500	....	....	
14, 800	74, 000	.031500	.003000	....	....	
15, 200	76, 000	.035000	.003500	....	....	
15, 600	78, 000	.039250	.004250	....	....	
16, 000	80, 000	.044000	.004750	....	....	
16, 400	82, 000	.051500	.007500	....	....	
16, 800	84, 000	.0650	.0135	....	....	
17, 200	86, 000	.0750	.0100	....	....	
17, 600	88, 000	.0900	.0150	....	....	
17, 900	89, 500	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	89, 500
Elastic limit per square inch of original section	do...	49, 000
Elongation per inch after rupture	inch..	0. 2650
Elongation per inch under strain at elastic limit	do...	.001650
Reduction in diameter at point of rupture	do...	.165
Reduction in area after rupture, per centum of original section		54. 6
Position of rupture		″.8 from neck
Character of broken surface		silky
Elongation of inch sections		″.39*, ″.14

No. 2339.

Marks, $\begin{matrix}8 & B_1 & T\\ B & L_{10} & I\end{matrix}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000100	.000100	0.	....	
2,000	10,000	.000250	.000150	0.	....	
3,000	15,000	.000400	.000150	0.	....	
4,000	20,000	.000500	.000100	0.	....	
5,000	25,000	.000650	.000150	0.	....	
6,000	30,000	.000850	.000200	0.	....	
7,000	35,000	.001000	.000150	0.	....	
8,000	40,000	.001150	.000150	0.	....	
9,000	45,000	.001400	.000250	....	....	
9,200	46,000	.001450	.000050	....	....	Elastic limit.
9,400	47,000	.002600	.001150	....	....	
9,600	48,000	.003000	.000400	....	....	
9,800	49,000	.004150	.001150	....	....	
10,000	50,000	.006000	.001850	....	....	
10,200	51,000	.007000	.001000	....	....	
10,400	52,000	.008000	.001000	....	....	
10,600	53,000	.009150	.001150	....	....	
10,800	54,000	.010000	.000850	....	....	
11,000	55,000	.011000	.001000	....	....	
11,200	56,000	.012000	.001000	....	....	
11,400	57,000	.013250	.001250	....	....	
11,600	58,000	.014600	.001350	....	....	
11,800	59,000	.015700	.001100	....	....	
12,000	60,000	.017000	.001300	....	....	
12,400	62,000	.019750	.002750	....	....	
12,800	64,000	.022500	.002750	....	....	
13,200	66,000	.025500	.003000	....	....	
13,600	68,000	.029000	.003550	....	....	
14,000	70,000	.033000	.004000	....	....	
14,400	72,000	.037500	.004500	....	....	
14,800	74,000	.043000	.005500	....	....	
15,200	76,000	.048500	.005500	....	....	
15,600	78,000	.059000	.010500	....	....	
16,000	80,000	.0650	.0060	....	....	
16,400	82,000	.0850	.0200	....	....	
16,800	84,000	.1150	.0300	....	....	
16,880	84,400	.1500	.0350	....	....	Tensile strength.

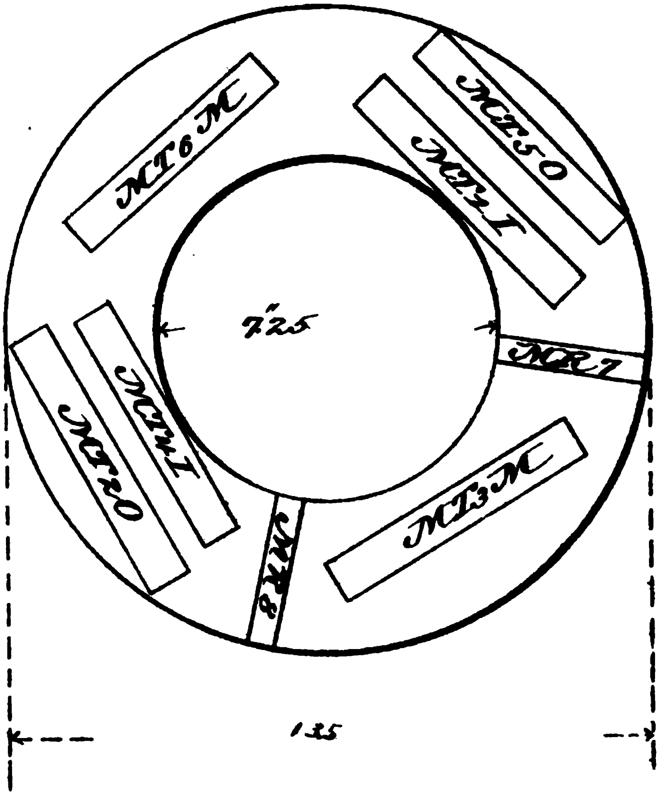
General summary.

Tensile strength per square inch of original section	pounds	84,400
Elastic limit per square inch of original section	do	46,000
Elongation per inch after rupture	inch	0.2700
Elongation per inch under strain at elastic limit	do	.001450
Reduction in diameter at point of rupture	do	.185
Reduction in area after rupture, per centum of original section		59.8
Position of rupture		".8 from neck
Character of broken surface		silky
Elongation of inch sections		".41, ".13

8" Steel B. L. Rifle No. 1.

Tube

Muzzle end



No. 2332.

Marks, $^{8\,R,\,T}_{M\,T,\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000500	.000233	0.	....	
5, 000	20, 000	.000667	.000167	0.	....	
6, 250	25, 000	.000800	.000133	0.	....	
7, 500	30, 000	.001000	.000200	0.	....	
8, 750	35, 000	.001167	.000167	0.	....	
10, 000	40, 000	.001333	.000166	0.	....	
11, 250	45, 000	.001467	.000134	0.	....	
12, 500	50, 000	.001667	.000200	0.	....	
12, 750	51, 000	.001700	.000033	....	....	
13, 000	52, 000	.001767	.000067	....	....	
13, 250	53, 000	.001800	.000233	....	....	
13, 500	54, 000	.001833	.000033	....	....	
13, 750	55, 000	.001867	.000034	....	....	
14, 000	56, 000	.001900	.000033	....	....	Elastic limit.
14, 250	57, 000	.002067	.000167	....	....	
14, 500	58, 000	.002300	.000033	....	....	
14, 750	59, 000	.002633	.000333	....	....	
15, 000	60, 000	.003233	.000600	....	....	
15, 500	62, 000	.005167	.001934	....	....	
16, 000	64, 000	.008167	.003000	....	....	
16, 500	66, 000	.010333	.002166	....	....	
17, 000	68, 000	.012833	.002500	....	....	
17, 500	70, 000	.014667	.001834	....	....	
18, 000	72, 000	.021500	.006833	....	....	
18, 500	74, 000	.022667	.001167	....	....	
19, 000	76, 000	.024000	.001333	....	....	
19, 500	78, 000	.025833	.001833	....	....	
20, 000	80, 000	.027833	.002000	....	....	
20, 500	82, 000	.030267	.002434	....	....	
21, 000	84, 000	.036000	.005733	....	....	
21, 500	86, 000	.039333	.003333	....	....	
22, 000	88, 000	.044167	.004834	....	....	
22, 500	90, 000	.0533	.009133	....	....	
23, 000	92, 000	.0600	.0067	....	....	
23, 500	94, 000	.0733	.0133	....	....	
23, 980	95, 920	.1200	.0467	....	....	Tensile strength.

General summary.

Specific gravity		7.8561
Hardness		19.81
Tensile strength per square inch of original section	pounds..	95, 920
Elastic limit per square inch of original section	do...	56, 000
Elongation per inch after rupture	inch..	0.1667
Elongation per inch under strain at elastic limit	do...	.001900
Reduction in diameter at point of rupture	do...	.094
Reduction in area after rupture, per centum of original section		30.6
Position of rupture		¾ inch from neck
Character of broken surface		granular; dull flaky spot
Elongation of inch-sections		″.12, ″.13, ″.25*

No. 2333.

Marks, $^{\text{S R, T}}_{\text{M T, O}}$
Diameter ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000400	.000133	0.	....	
5,000	20,000	.000567	.000167	0.	....	
6,250	25,000	.000733	.000166	0.	....	
7,500	30,000	.000900	.000167	0.	....	
8,750	35,000	.001100	.000200	0.	....	
10,000	40,000	.001267	.000167	0.	....	
11,250	45,000	.001467	.000200	....	....	
11,500	46,000	.001500	.000033	....	....	
11,750	47,000	.001533	.000033	....	....	
12,000	48,000	.001567	.000034	....	....	Elastic limit.
12,250	49,000	.002700	.001133	....	....	
12,500	50,000	.004133	.001433	....	....	
12,750	51,000	.004833	.000700	....	....	
13,000	52,000	.006033	.001200	....	....	
13,250	53,000	.006767	.000734	....	....	
13,500	54,000	.007800	.001033	....	....	
13,750	55,000	.008600	.000800	....	....	
14,000	56,000	.009667	.001067	....	....	
14,250	57,000	.010200	.000533	....	....	
14,500	58,000	.011200	.001000	....	....	
14,750	59,000	.012000	.000800	....	....	
15,000	60,000	.013167	.001167	....	....	
15,500	62,000	.015500	.002333	....	....	
16,000	64,000	.017667	.002167	....	....	
16,500	66,000	.019833	.002166	....	....	
17,000	68,000	.022333	.002500	....	....	
17,500	70,000	.025267	.002934	....	....	
18,000	72,000	.027833	.002566	....	....	
18,500	74,000	.031167	.003334	....	....	
19,000	76,000	.034667	.003500	....	....	
19,500	78,000	.038667	.004000	....	....	
20,000	80,000	.043667	.005000	....	....	
20,500	82,000	.0500	.006333	....	....	
21,000	84,000	.0600	.0100	....	....	
21,500	86,000	.0700	.0100	....	....	
22,000	88,000	.0800	.0100	....	....	
22,425	89,700	.1367	.0567	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 89,700
Elastic limit per square inch of original section ....do .. 48,000
Elongation per inch after rupture ....inch.. 0.2333
Elongation per inch under strain at elastic limit ....do .. .001567
Reduction in diameter at point of rupture... ....do... .154
Reduction in area after rupture, per centum of original section.............................. 47.2
Position of rupture...".15 from middle of stem
Character of broken surface...................................silky; interspersed with granulation
Elongation of inch sections..".40*, ".13, ".17

No. 2334.

Marks, $\frac{8\ R,}{M\ T,}\ \frac{T}{M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000333	.000200	0.	....	
3, 750	15, 000	.000500	.000167	0.	....	
5, 000	20, 000	.000667	.000167	0.	....	
6, 250	25, 000	.000833	.000166	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
8, 750	35, 000	.001167	.000167	0.	....	
10, 000	40, 000	.001367	.000200	.000033	.000033	
11, 250	45, 000	.001567	.000200	....	....	
11, 500	46, 000	.001600	.000033	....	....	
11, 750	47, 000	.001667	.000067	....	....	Elastic limit.
12, 000	48, 000	.002400	.000733	....	....	
12, 250	49, 000	.004000	.001600	....	....	
12, 500	50, 000	.005000	.001000	....	....	
12, 750	51, 000	.005700	.000700	....	....	
13, 000	52, 000	.006767	.001067	....	....	
13, 250	53, 000	.007600	.000833	....	....	
13, 500	54, 000	.008167	.000567	....	....	
13, 750	55, 000	.009033	.000866	....	....	
14, 000	56, 000	.010000	.000967	....	....	
14, 250	57, 000	.010667	.000667	....	....	
14, 500	58, 000	.011767	.001100	....	....	
14, 750	59, 000	.012667	.000900	....	....	
15, 000	60, 000	.013733	.001066	....	....	
15, 500	62, 000	.015667	.001934	....	....	
16, 000	64, 000	.018000	.002333	....	....	
16, 500	66, 000	.020000	.002000	....	....	
17, 000	68, 000	.022367	.002367	....	....	
17, 500	70, 000	.025267	.002900	....	....	
18, 000	72, 000	.027833	.002566	....	....	
18, 500	74, 000	.031000	.003167	....	....	
19, 000	76, 000	.034700	.003700	....	....	
19, 500	78, 000	.038667	.003967	....	....	
20, 000	80, 000	.043167	.004500	....	....	
20, 500	82, 000	.049000	.005833	....	....	
21, 000	84, 000	.056333	.007333	....	....	
21, 500	86, 000	.0633	.006967	....	....	
22, 000	88, 000	.0767	.0134	....	....	
22, 500	90, 000	.1000	.0233	....	....	
22, 640	90, 560	.1333	.0333	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................pounds..	90, 560
Elastic limit per square inch of original section ....do...	47, 000
Elongation per inch after rupture....................inch..	0. 1900
Elongation per inch under strain at elastic limit ....do...	.001667
Reduction in diametor at point of rupture ....do...	.084
Reduction in area after rupture, per centum of original section....................	27. 6
Position of rupture	1″.2 from neck
Character of broken surface	granular; dull flaky spot
Elongation of inch sections	″.12, ″.23*, ″.22

No. 639½.

Marks, $\substack{8\,R_1\,T \\ M\,T_4\,I}$
Length, 5″.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000233	.000133	0.	....	
7, 500	15, 000	.000367	.000134	0.	....	
10, 000	20, 000	.000533	.000166	0.	....	
12, 500	25, 000	.000700	.000167	0.	....	
15, 000	30, 000	.000867	.000167	0.	....	
17, 500	35, 000	.001033	.000166	0.	....	
20, 000	40, 000	.001200	.000167	0.	....	
20, 500	41, 000	.001233	.000033	....	....	
21, 000	42, 000	.001267	.000034	....	....	
21, 500	43, 000	.001300	.000033	....	....	
22, 000	44, 000	.001333	.000033	....	....	
22, 500	45, 000	.001367	.000034	0.	....	
23, 000	46, 000	.001400	.000033	....	....	
23, 500	47, 000	.001433	.000033	....	....	
24, 000	48, 000	.001467	.000034	....	....	
24, 500	49, 000	.001500	.000033	....	....	
25, 000	50, 000	.001533	.000033	....	....	
25, 500	51, 000	.001567	.000034	....	....	
26, 000	52, 000	.001633	.000066	....	....	
26, 500	53, 000	.001667	.000034	....	....	
27, 000	54, 000	.001700	.000033	....	....	
27, 500	55, 000	.001700	0.	....	....	
28, 000	56, 000	.001767	.000067	....	....	Elastic limit.
28, 500	57, 000	.001900	.000133	....	....	
29, 000	58, 000	.002167	.000267	....	....	
29, 500	59, 000	.002600	.000433	....	....	
30, 000	60, 000	.003400	.000800	....	....	
30, 500	61, 000	.004267	.000867	....	....	
31, 000	62, 000	.005300	.001033	....	....	
41, 780	83, 560	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds	56, 000
Compression per inch under stress at elastic limit	inch	0.001767
Ultimate strength per square inch of original section	pounds	83, 560
Manner of failure		triple flexure

No. 640.

Marks, $\begin{smallmatrix} 8\,R_1\,T \\ M\,T_5\,O \end{smallmatrix}$
Length, 4''.995.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000233	.000133	0.	....	
7,500	15,000	.000400	.000167	0.	....	
10,000	20,000	.000567	.000167	0.	....	
12,500	25,000	.000733	.000166	0.	....	
15,000	30,000	.000933	.000200	0.	....	
17,500	35,000	.001100	.000167	.000033	.000033	
20,000	40,000	.001300	.000200	.000067	.000034	
22,500	45,000	.001467	.000167	.000067	0.	
25,000	50,000	.001667	.000200	.000100	.000033	
25,500	51,000	.001700	.000033	....	....	
26,000	52,000	.001767	.000067	....	....	Elastic limit.
26,500	53,000	.002300	.000533	....	....	
27,000	54,000	.004200	.001900	....	....	
27,500	55,000	.005667	.001467	....	....	
28,000	56,000	.006700	.001033	....	....	
43,650	87,300	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	52,000
Compression per inch under stress at elastic limit	inch..	0.001767
Ultimate strength per square inch of original section	pounds..	87,300
Manner of failure		triple flexure

No. 639½.

Marks, $^{8\ R_1\ T}_{M\ T_4\ I}$
Length, 5″.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000233	.000133	0.	....	
7, 500	15, 000	.000367	.000134	0.	....	
10, 000	20, 000	.000533	.000166	0.	....	
12, 500	25, 000	.000700	.000167	0.	....	
15, 000	30, 000	.000867	.000167	0.	....	
17, 500	35, 000	.001033	.000166	0.	....	
20, 000	40, 000	.001200	.000167	0.	....	
20, 500	41, 000	.001233	.000033	....	....	
21, 000	42, 000	.001267	.000034	....	....	
21, 500	43, 000	.001300	.000033	....	....	
22, 000	44, 000	.001333	.000033	....	....	
22, 500	45, 000	.001367	.000034	0.	....	
23, 000	46, 000	.001400	.000033	....	....	
23, 500	47, 000	.001433	.000033	....	....	
24, 000	48, 000	.001467	.000034	....	....	
24, 500	49, 000	.001500	.000033	....	....	
25, 000	50, 000	.001533	.000033	....	....	
25, 500	51, 000	.001567	.000034	....	....	
26, 000	52, 000	.001633	.000066	....	....	
26, 500	53, 000	.001667	.000034	....	....	
27, 000	54, 000	.001700	.000033	....	....	
27, 500	55, 000	.001700	0.	....	....	
28, 000	56, 000	.001767	.000067	....	....	Elastic limit.
28, 500	57, 000	.001900	.000133	....	....	
29, 000	58, 000	.002167	.000267	....	....	
29, 500	59, 000	.002600	.000433	....	....	
30, 000	60, 000	.003400	.000800	....	....	
30, 500	61, 000	.004267	.000867	....	....	
31, 000	62, 000	.005300	.001033	....	....	
41, 780	83, 560	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	56, 000
Compression per inch under stress at elastic limit	inch..	0. 001767
Ultimate strength per square inch of original section	pounds..	83. 560
Manner of failure		triple flexure

No. 640.

Marks, $\overset{8\ E_1\ T}{M\ T_5\ O}$
Length, 4''.995.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000233	.000133	0.	....	
7,500	15,000	.000400	.000167	0.	....	
10,000	20,000	.000567	.000167	0.	....	
12,500	25,000	.000733	.000166	0.	....	
15,000	30,000	.000933	.000200	0.	....	
17,500	35,000	.001100	.000167	.000033	.000033	
20,000	40,000	.001300	.000200	.000067	.000034	
22,500	45,000	.001467	.000167	.000067	0.	
25,000	50,000	.001667	.000200	.000100	.000033	
25,500	51,000	.001700	.000033	....	....	
26,000	52,000	.001767	.000067	....	....	Elastic limit.
26,500	53,000	.002300	.000533	....	....	
27,000	54,000	.004200	.001900	....	....	
27,500	55,000	.005667	.001467	....	....	
28,000	56,000	.006700	.001033	....	....	
43,650	87,300	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds..	52,000
Compression per inch under stress at elastic limit ....inch..	0.001767
Ultimate strength per square inch of original section ....pounds..	87,300
Manner of failure..	triple flexure

No. 641.

Marks, $\overset{S\ R_1\ T}{M\ T_6\ M}$
Length, 5''.001.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000067	.000067	0.	....	
5,000	10,000	.000200	.000133	0.	....	
7,500	15,000	.000300	.000100	0.	....	
10,000	20,000	.000500	.000200	0.	....	
12,500	25,000	.000667	.000167	0.	....	
15,000	30,000	.000833	.000166	0.	....	
17,500	35,000	.001000	.000167	0.	....	
20,000	40,000	.001167	.000167	0.	....	
22,500	45,000	.001367	.000200	0.	....	
25,000	50,000	.001600	.000233	.000033	.000033	
25,500	51,000	.001633	.000033	....	....	Elastic limit.
26,000	52,000	.001533	—.000100	....	....	
26,500	53,000	.001500	—.000033	....	....	
27,000	54,000	.001733	.000233	....	....	
27,500	55,000	.002200	.000467	....	....	
28,000	56,000	.002933	.000733	....	....	
28,500	57,000	.003700	.000767	....	....	
29,000	58,000	.004533	.000833	....	....	
41,900	83,800	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	51,000
Compression per inch under stress at elastic limit	inch..	0.001633
Ultimate strength per square inch of original section	pounds..	83,800
Manner of failure		triple flexure

No. 644.

Marks, $^{\mathrm{S\,R\,T}}_{\mathrm{M\,R}}$
Length, 3''.075.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	**Initial load.**
2, 500	5, 000	.000100	.000100	0.	...	
5, 000	10, 000	.000250	.000150	0.	...	
7, 500	15, 000	.000400	.000150	0.	...	
10, 000	20, 000	.000550	.000150	0.	...	
12, 500	25, 000	.000700	.000150	0.	...	
15, 000	30, 000	.000850	.000150	0.	...	
17, 500	35, 000	.001050	.000200	0.	...	
20, 000	40, 000	.001250	.000200	0.	...	
22, 500	45, 000	.001450	.000200	0.	...	
25, 000	50, 000	.001650	.000200	0.	...	
25, 500	51, 000	.001700	.000050	...	...	**Elastic limit.**
26, 000	52, 000	.002500	.000800	...	...	
26, 500	53, 000	.003400	.000900	...	...	
27, 000	54, 000	.004400	.001000	...	...	
27, 500	55, 000	.005250	.000850	...	...	
28, 000	56, 000	.006000	.000750	...	...	
50, 000	100, 000	...	...	...	...	**Test discontinued.**

General summary.

Elastic limit per square inch of original section ....pounds.. 51, 000
Compression per inch under stress at elastic limit..inch.. 0. 001700
Manner of failure..specimen permanently shortened to 2''.92

No. 645.

Marks, $\substack{8\,R_1\,T \\ M\,R_2}$
Length, 3''.070.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	. 000100	. 000100	0.	....	
5, 000	10, 000	. 000250	. 000150	0.	....	
7, 500	15, 000	. 000400	. 000150	0.	....	
10, 000	20, 000	. 000550	. 000150	0.	....	
12, 500	25, 000	. 000750	. 000200	0.	....	
15, 000	30, 000	. 000950	. 000200	0.	....	
17, 500	35, 000	. 001150	. 000200	0.	....	
20, 000	40, 000	. 001350	. 000200	0.	....	
22, 500	45, 000	. 001500	. 000150	0.	....	
23, 000	46, 000	. 001550	. 000050	....	....	
23, 500	47, 000	. 001550	0.	....	....	
24, 000	48, 000	. 001600	. 000050	....	....	
24, 500	49, 000	. 001700	. 000100	....	....	Elastic limit.
25, 000	50, 000	. 002000	. 000300	....	....	
25, 500	51, 000	. 003100	. 001100	....	....	
26, 000	52, 000	. 004000	. 000900	....	....	
26, 500	53, 000	. 005000	. 001000	....	....	
27, 000	54, 000	. 006200	. 001200	....	....	
27, 500	55, 000	. 007100	. 000900	....	....	
28, 000	56, 000	. 007950	. 000850	....	....	
50, 000	100, 000	....	....	....	....	Test discontinued.

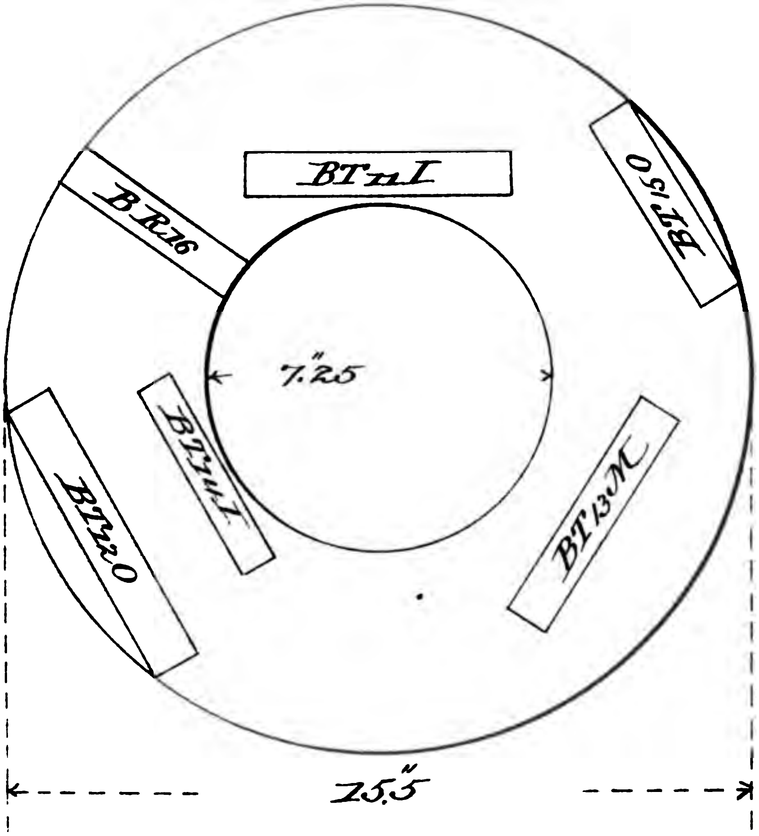
General summary.

Elastic limit per square inch of original section	pounds..	49, 000
Compression per inch under stress at elastic limit	inch..	0. 001700
Manner of failure		specimen permanently shortened to 2''. 90

8" Steel B. L. Rifle No. 1.

Tube

Breech end



H Ex 31 49 2

[Specimens from second slice of tube after retreatment.]

No. 2564.

Marks, $\substack{8\ R_1\ T \\ B\ T_{11}\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10. 000	.000233	.000133	0.	....	
3, 750	15, 000	.000400	.000167	0.	....	
5, 000	20, 000	.000600	.000200	0.	....	
6, 250	25 000	.000767	.000167	0.	....	
7, 500	30, 000	.000967	.000200	0.	....	
8, 750	35, 000	.001100	.000133	....	....	
10. 000	40, 000	.001267	.000167	....	....	
10, 250	41, 000	.001300	.000033	....	....	
10, 500	42. 000	.001367	.000067	....	....	
10, 750	43, 000	.001400	.000033	....	....	
11, 000	44, 000	.001467	.000067	....	....	
11, 250	45, 000	.001533	.000066	....	....	
11, 500	46, 000	.001567	.000034	....	....	
11, 750	47. 000	.001600	.000033	....	....	
12, 000	48. 000	.001633	.000033	....	....	
12, 250	49, 000	.001700	.000067	....	....	Elastic limit.
12, 500	50, 000	.002067	.000367	....	....	
12, 750	51, 000	.002833	.000766	....	....	
13, 000	52, 000	.003867	.001034	....	....	
13, 250	53, 000	.004833	.000966	....	....	
13, 500	54, 000	.006367	.001534	....	....	
13, 750	55, 000	.007367	.001000	....	....	
14, 000	56. 000	.009000	.001633	....	....	
14, 250	57. 000	.010067	.001067	....	....	
14, 500	58, 000	.011167	.001100	....	....	
14, 750	59. 000	.012333	.001166	....	....	
15, 000	60, 000	.013433	.001100	....	....	
15, 500	62, 000	.015500	.002067	....	....	
16. 000	64, 000	.018333	.002833	....	....	
16, 500	66, 000	.021167	.002834	....	....	
17, 000	68, 000	.024000	.002833	....	....	
17, 500	70, 000	.027067	.003067	....	....	
18, 000	72, 000	.031000	.003933	....	....	
18, 500	74, 000	.035000	.004000	....	....	
19, 000	76, 000	.0367	.0017	....	....	
19, 500	78, 000	.0433	.0066	....	....	
20, 000	80, 000	.0567	.0134	....	....	
20, 500	82, 000	.0667	.0100	....	....	
21, 000	84, 000	.0733	.0066	....	....	
21, 500	86, 000	.0900	.0167	....	....	
21, 710	86, 840	.1333	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	86, 840
Elastic limit per square inch of original section	do...	49, 000
Elongation per inch after rupture	inch..	0. 2333
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		1″.75 from neck
Character of broken surface		silky
Elongation of inch sections		″.18, ″.40*, ″.12

No. 2565.

Marks, $\substack{\text{S R}_1\text{ T}\\ \text{B T}_{12}\text{ O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000300	.000200	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001100	.000133	....	....	
10, 000	40, 000	.001333	.000233	....	....	
10, 250	41, 000	.001333	0.	....	....	
10, 500	42, 000	.001367	.000034	....	....	
10, 750	43, 000	.001400	.000033	....	....	
11, 000	44, 000	.001433	.000033	....	....	
11, 250	45, 000	.001500	.000067	....	....	
11, 500	46, 000	.001533	.000033	....	....	
11, 750	47, 000	.001567	.000034	....	....	
12, 000	48, 000	.001633	.000066	....	....	
12, 250	49, 000	.001667	.000034	....	....	
12, 500	50, 000	.001700	.000033	....	....	
12, 750	51, 000	.001767	.000067	....	....	Elastic limit.
13, 000	52, 000	.002567	.000800	....	....	
13, 250	53, 000	.003500	.000933	....	....	
13, 500	54, 000	.004733	.001233	....	....	
13, 750	55, 000	.006200	.001467	....	....	
14, 000	56, 000	.007167	.000967	....	....	
14, 250	57, 000	.008100	.000933	....	....	
14, 500	58, 000	.009167	.001067	....	....	
14, 750	59, 000	.010167	.001000	....	....	
15, 000	60, 000	.011167	.001000	....	....	
15, 500	62, 000	.013233	.002066	....	....	
16, 000	64, 000	.015667	.002434	....	....	
16, 500	66, 000	.018000	.002333	....	....	
17, 000	68, 000	.020167	.002167	....	....	
17, 500	70, 000	.023100	.002933	....	....	
18, 000	72, 000	.025667	.002567	....	....	
18, 500	74, 000	.029000	.003333	....	....	
19, 000	76, 000	.032333	.003333	....	....	
19, 500	78, 000	.035733	.003400	....	....	
20, 000	80, 000	.0400	.004267	....	....	
20, 500	82, 000	.0467	.0067	....	....	
21, 000	84, 000	.0567	.0100	....	....	
21, 500	86, 000	.0633	.0066	....	....	
22, 000	88, 000	.0733	.0100	....	....	
22, 500	90, 000	.0967	.0234	....	....	
22, 600	90, 400	.1267	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	90, 400
Elastic limit per square inch of original section	do	51, 000
Elongation per inch after rupture	inch	0. 2000
Elongation per inch under strain at elastic limit	do	.001767
Reduction in diameter at point of rupture	do	.174
Reduction in area after rupture, per centum of original section		52. 2
Position of rupture		1″.30 from neck
Character of broken surface		silky
Elongation of inch sections		″.09, ″.31*, ″.20

No. 2566.

Marks, $\begin{smallmatrix}8\,R_1\,T\\B\,T_1,\,M\end{smallmatrix}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001100	.000167	....	....	
10, 000	40, 000	.001267	.000167	....	....	
11, 250	45, 000	.001433	.000166	....	....	
11, 500	46, 000	.001467	.000034	....	....	Elastic limit.
11, 750	47, 000	.001600	.000133	....	....	
12, 000	48, 000	.003267	.001667	....	....	
12, 250	49, 000	.004500	.001233	....	....	
12, 500	50, 000	.005400	.000900	....	....	
12, 750	51, 000	.006467	.001067	....	....	
13, 000	52, 000	.007633	.001166	....	....	
13, 250	53, 000	.008467	.000834	....	....	
13, 500	54, 000	.009667	.001200	....	....	
13, 750	55, 000	.010567	.000900	....	....	
14, 000	56, 000	.011600	.001033	....	....	
14, 250	57, 000	.012667	.001067	....	....	
14, 500	58, 000	.013667	.001000	....	....	
14, 750	59, 000	.014533	.000866	....	....	
15, 000	60, 000	.015800	.001267	....	....	
15, 500	62, 000	.018667	.002867	....	....	
16, 000	64, 000	.021000	.002333	....	....	
16, 500	66, 000	.023833	.002833	....	....	
17, 000	68, 000	.026667	.002834	....	....	
17, 500	70, 000	.030000	.003333	....	....	
18, 000	72, 000	.033733	.003733	....	....	
18, 500	74, 000	.0367	.002967	....	....	
19, 000	76, 000	.0400	.0033	....	....	
19, 500	78, 000	.0467	.0067	....	....	
20, 000	80, 000	.0567	.0100	....	....	
20, 500	82, 000	.0667	.0100	....	....	
21, 000	84, 000	.0767	.0100	....	....	
21, 500	86, 000	.1067	.0300	....	....	
21, 550	86, 200	.1367	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	86, 200
Elastic limit per square inch of original section	do...	46, 000
Elongation per inch after rupture	inch..	0. 2100
Elongation per inch under strain at elastic limit	do...	.001467
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section		52. 2
Position of rupture		1″.50 from neck
Character of broken surface		silky
Elongation of inch sections		″.15, ″.36*, ″.12

No. 662.

Marks, $\genfrac{}{}{0pt}{}{8\ R_1\ T}{B\ T_{14}\ I}$
Length, 4''.494.
Diameter, ''.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000267	.000167	0.	....	
7,500	15,000	.000433	.000166	0.	....	
10,000	20,000	.000600	.000167	0.	....	
12,500	25,000	.000767	.000167	0.	....	
15,000	30,000	.000933	.000166	0.	....	
17,500	35,000	.001100	.000167	.000033	.000033	
20,000	40,000	.001300	.000200	....	....	
20,500	41,000	.001333	.000033	....	....	
21,000	42,000	.001400	.000067	....	....	
21,500	43,000	.001433	.000033	....	....	
22,000	44,000	.001467	.000034	....	....	
22,500	45,000	.001500	.000033	....	....	
23,000	46,000	.001533	.000033	....	....	
23,500	47,000	.001567	.000034	....	....	
24,000	48,000	.001667	.000100	....	....	
24,500	49,000	.001700	.000033	....	....	Elastic limit.
25,000	50,000	.002333	.000633	....	....	
25,500	51,000	.003400	.001067	....	....	
26,000	52,000	.004633	.001233	....	....	
26,500	53,000	.005233	.000600	....	....	
27,000	54,000	.006333	.001100	....	....	
42,880	85,760	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	49,000
Compression per inch under stress at elastic limit	inch..	0.001700
Ultimate strength per square inch of original section	pounds..	85,760
Manner of failure		triple flexure

No. 663.

Marks, $\frac{8\ R_1\ T}{B\ T_{15}\ O}$
Length, 4''.503.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000133	.000133	0.	....	
5,000	10,000	.000300	.000167	0.	....	
7,500	15,000	.000467	.000167	0.	....	
10,000	20,000	.000633	.000166	0.	....	
12,500	25,000	.000800	.000167	0.	....	
15,000	30,000	.001000	.000200	0.	....	
17,500	35,000	.001200	.000200	.000033	.000033	
20,000	40,000	.001367	.000167	....	....	
20,500	41,000	.001400	.000033	....	....	
21,000	42,000	.001433	.000033	....	....	
21,500	43,000	.001467	.000034	....	....	
22,000	44,000	.001500	.000033	....	....	
22,500	45,000	.001533	.000033	....	....	
23,000	46,000	.001600	.000067	....	....	
23,500	47,000	.001633	.000033	....	....	
24,000	48,000	.001667	.000034	....	....	
24,500	49,000	.001700	.000033	....	....	
25,000	50,000	.001767	.000067	....	....	Elastic limit.
25,500	51,000	.002500	.000733	....	....	
26,000	52,000	.003267	.000767	....	....	
26,500	53,000	.003900	.000633	....	....	
27,000	54,000	.004667	.000767	....	....	
46,700	93,400	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	50,000
Compression per inch under stress at elastic limit	inch..	0.001767
Ultimate strength per square inch of original section	pounds..	93,400
Manner of failure		triple flexure

No. 664.

Marks, $^{8\,R_1\,T}_{B\,R_{16}}$
Length, 4''.004.
Diameter, ''.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000150	.000150	0.	....	
5,000	10,000	.000400	.000250	0.	....	
7,500	15,000	.000600	.000200	0.	....	
10,000	20,000	.000700	.000100	0.	....	
12,500	25,000	.000850	.000150	0.	....	
15,000	30,000	.001050	.000200	0.	....	
17,500	35,000	.001200	.000150	0.	....	
20,000	40,000	.001350	.000150	....	....	
20,500	41,000	.001400	.000050	....	....	
21,000	42,000	.001400	0.	....	....	
21,500	43,000	.001450	.000050	....	....	
22,000	44,000	.001500	.000050	....	....	
22,500	45,000	.001550	.000050	....	....	
23,000	46,000	.001650	.000100	....	....	
23,500	47,000	.001700	.000050	....	....	Elastic limit.
24,000	48,000	.001850	.000150	....	....	
24,500	49,000	.003000	.001150	....	....	
25,000	50,000	.004000	.001000	....	....	
25,500	51,000	.004900	.000900	....	....	
26,000	52,000	.005750	.000850	....	....	
48,520	97,040	....	....	....	....	Ultimate strength.

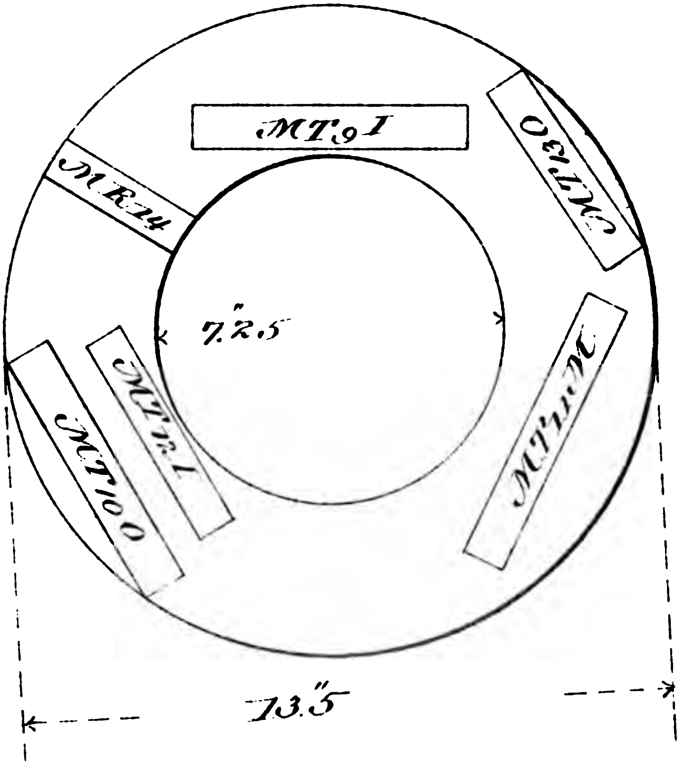
General summary.

Elastic limit per square inch of original section	pounds..	47,000
Compression per inch under stress at elastic limit	inch..	0.001700
Ultimate strength per square inch of original section	pounds..	97,040
Manner of failure		triple flexure

8" Steel B. L. Rifle No. 1.

Tube

Muzzle end



H Ex 31 49 2

[Specimens from second slice of tube after retreatment.]

No. 2567.

Marks, $\substack{8\ R,\ T \\ M\ T,\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000233	.000133	0.	....	
3, 750	15, 000	.000400	.000167	0.	....	
5, 000	20, 000	.000567	.000167	—.000033	—.000033	
6, 250	25, 000	.000700	.000133	—.000033	0.	
7, 500	30, 000	.000833	.000133	—.000033	0.	
8, 750	35, 000	.000967	.000134	....	....	
10, 000	40, 000	.001133	.000166	....	....	
11, 250	45, 000	.001300	.000167	....	....	
11, 500	46, 000	.001367	.000067	....	....	
11, 750	47, 000	.001400	.000033	....	....	
12, 000	48, 000	.001433	.000033	....	....	
12, 250	49, 000	.001467	.000034	....	....	
12, 500	50, 000	.001500	.000033	....	....	
12, 750	51, 000	.001567	.000067	....	....	
13, 000	52, 000	.001633	.000066	....	....	
13, 250	53, 000	.001733	.000100	....	....	Elastic limit.
13, 500	54, 000	.001933	.000200	....	....	
13, 750	55, 000	.002233	.000300	....	....	
14, 000	56, 000	.003067	.000834	....	....	
14, 250	57, 000	.004100	.001033	....	....	
14, 500	58, 000	.005467	.001367	....	....	
14, 750	59, 000	.006500	.001033	....	....	
15, 000	60, 000	.007700	.001200	....	....	
15, 500	62, 000	.009567	.001867	....	....	
16, 000	64, 000	.011333	.001766	....	....	
16, 500	66, 000	.013267	.001934	....	....	
17, 000	68, 000	.015667	.002400	....	....	
17, 500	70, 000	.018000	.002333	....	....	
18, 000	72, 000	.020433	.002433	....	....	
18, 500	74, 000	.022700	.002267	....	....	
19, 000	76, 000	.025367	.002667	....	....	
19, 500	78, 000	.028400	.003033	....	....	
20, 000	80, 000	.031333	.002933	....	....	
20, 500	82, 000	.035333	.004000	....	....	
21, 000	84, 000	.0400	.004667	....	....	
21, 500	86, 000	.0433	.0033	....	....	
22, 000	88, 000	.0533	.0100	....	....	
22, 500	90, 000	.0633	.0100	....	....	
23, 000	92, 000	.0733	.0100	....	....	
23, 500	94, 000	.1000	.0267	....	....	
23, 580	94, 320	.1333	.0333	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	94, 320
Elastic limit per square inch of original section	do...	53, 000
Elongation per inch after rupture	inch..	0. 1700
Elongation per inch under strain at elastic limit	do...	.001733
Reduction in diameter at point of rupture	do...	.064
Reduction in area after rupture, per centum of original section		21. 4
Position of rupture		1″.55 from neck
Character of broken surface		granular; flaky spot at circumference
Elongation of inch sections		″.14, ″.22, ″.15

No. 2568.

Marks, $\overset{8\ R_1\ T}{M\ T_{10}\ O}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000300	.000200	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001167	.000200	....	....	
10,000	40,000	.001267	.000100	....	....	
11,250	45,000	.001467	.000200	....	....	
11,500	46,000	.001500	.000033	....	....	
11,750	47,000	.001533	.000033	....	....	
12,000	48,000	.001567	.000034	....	....	
12,250	49,000	.001600	.000033	....	....	
12,500	50,000	.001667	.000067	....	....	
12,750	51,000	.001733	.000066	....	....	
13,000	52,000	.001800	.000067	....	....	Elastic limit.
13,250	53,000	.002100	.000300	....	....	
13,500	54,000	.002833	.000783	....	....	
13,750	55,000	.003500	.000667	....	....	
14,000	56,000	.004767	.001267	....	....	
14,250	57,000	.005767	.001000	....	....	
14,500	58,000	.006933	.001166	....	....	
14,750	59,000	.007767	.000834	....	....	
15,000	60,000	.008800	.001033	....	....	
15,500	62,000	.010667	.001867	....	....	
16,000	64,000	.013000	.002333	....	....	
16,500	66,000	.014933	.001933	....	....	
17,000	68,000	.017000	.002067	....	....	
17,500	70,000	.018833	.001833	....	....	
18,000	72,000	.021333	.002500	....	....	
18,500	74,000	.024000	.002667	....	....	
19,000	76,000	.026667	.002667	....	....	
19,500	78,000	.029667	.003000	....	....	
20,000	80,000	.034000	.004333	....	....	
20,500	82,000	.0400	.0060	....	....	
21,000	84,000	.0433	.0033	....	....	
21,500	86,000	.0467	.0034	....	....	
22,000	88,000	.0567	.0100	....	....	
22,500	90,000	.0633	.0066	....	....	
23,000	92,000	.0767	.0134	....	....	
23,500	94,000	.1100	.0333	....	....	
23,520	94,080	.1333	.0233	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	94,080
Elastic limit per square inch of original section	do...	52,000
Elongation per inch after rupture	inch..	0.1967
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.184
Reduction in area after rupture, per centum of original section		54.6
Position of rupture		1 inch from neck
Character of broken surface		silky; trace of granulation
Elongation of inch sections		″.10, ″.15, ″.34*

No. 2569.

Marks, $\overset{8}{M}\overset{R_1}{T_{11}}\overset{T}{M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000633	.000200	0.	....	
6, 250	25, 000	.000833	.000200	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
8, 750	35, 000	.001133	.000133	....	....	
10, 000	40, 000	.001333	.000200	....	....	
11, 250	45, 000	.001467	.000134	....	....	
11, 500	46, 000	.001533	.000066	....	....	
11, 750	47, 000	.001567	.000034	....	....	
12, 000	48, 000	.001633	.000066	....	....	
12, 250	49, 000	.001667	.000034	....	....	
12, 500	50, 000	.001733	.000066	....	....	Elastic limit.
12, 750	51, 000	.002833	.001100	....	....	
13, 000	52, 000	.004700	.001867	....	....	
13, 250	53, 000	.005667	.000967	....	....	
13, 500	54, 000	.006467	.000800	....	....	
13, 750	55, 000	.007333	.000866	....	....	
14, 000	56, 000	.008233	.000900	....	....	
14, 250	57, 000	.009000	.000767	....	....	
14, 500	58, 000	.010167	.001167	....	....	
14, 750	59, 000	.010833	.000666	....	....	
15, 000	60, 000	.012033	.001200	....	....	
15, 500	62, 000	.013333	.001300	....	....	
16, 000	64, 000	.016500	.003167	....	....	
16, 500	66, 000	.018033	.001533	....	....	
17, 000	68, 000	.020000	.001967	....	....	
17, 500	70, 000	.023333	.003333	....	....	
18, 000	72, 000	.026333	.003000	....	....	
18, 500	74, 000	.029500	.003167	....	....	
19, 000	76, 000	.032500	.003000	....	....	
19, 500	78, 000	.035667	.003167	....	....	
20, 000	80, 000	.0400	.004333	....	....	
20, 500	82, 000	.0433	.0033	....	....	
21, 000	84, 000	.0533	.0100	....	....	
21, 500	86, 000	.0633	.0100	....	....	
22, 000	88, 000	.0700	.0067	....	....	
22, 500	90, 000	.0867	.0167	....	....	
22, 900	91, 600	.1400	.0533	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	91, 600
Elastic limit per square inch of original section	do...	50, 000
Elongation per inch after rupture	inch..	0. 2133
Elongation per inch under strain at elastic limit	do...	.001733
Reduction in diameter at point of rupture	do...	.134
Reduction in area after rupture, per centum of original section		41. 9
Position of rupture		1″.55 from neck
Character of broken surface		silky
Elongation of inch sections		″.11, ″.35*, ″.1

No. 2568.

Marks, $\genfrac{}{}{0pt}{}{8\ R_1\ T}{M\ T_{10}\ O}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.		
2, 500	10, 000	.000300	.000200	0.		
3, 750	15, 000	.000467	.000167	0.		
5, 000	20, 000	.000633	.000166	0.		
6, 250	25, 000	.000800	.000167	0.		
7, 500	30, 000	.000967	.000167	0.		
8, 750	35, 000	.001167	.000200			
10, 000	40, 000	.001267	.000100			
11, 250	45, 000	.001467	.000200			
11, 500	46, 000	.001500	.000033			
11, 750	47, 000	.001533	.000033			
12, 000	48, 000	.001567	.000034			
12, 250	49, 000	.001600	.000033			
12, 500	50, 000	.001667	.000067			
12, 750	51, 000	.001733	.000066			
13, 000	52, 000	.001800	.000067			Elastic limit.
13, 250	53, 000	.002100	.000300			
13, 500	54, 000	.002833	.000733			
13, 750	55, 000	.003500	.000667			
14, 000	56, 000	.004767	.001267			
14, 250	57, 000	.005767	.001000			
14, 500	58, 000	.006933	.001166			
14, 750	59, 000	.007767	.000834			
15, 000	60, 000	.008800	.001033			
15, 500	62, 000	.010667	.001867			
16, 000	64, 000	.013000	.002333			
16, 500	66, 000	.014933	.001933			
17, 000	68, 000	.017000	.002067			
17, 500	70, 000	.018833	.001833			
18, 000	72, 000	.021333	.002500			
18, 500	74, 000	.024000	.002667			
19, 000	76, 000	.026667	.002667			
19, 500	78, 000	.029667	.003000			
20, 000	80, 000	.034000	.004333			
20, 500	82, 000	.0400	.0060			
21, 000	84, 000	.0433	.0033			
21, 500	86, 000	.0467	.0034			
22, 000	88, 000	.0567	.0100			
22, 500	90, 000	.0633	.0066			
23, 000	92, 000	.0767	.0134			
23, 500	94, 000	.1100	.0333			
23, 520	94, 080	.1333	.0233			Tensile strength.

General summary.

Tensile strength per square inch of original section........pounds..	94, 080
Elastic limit per square inch of original section........do...	52, 000
Elongation per inch after rupture........inch..	0. 1967
Elongation per inch under strain at elastic limit........do...	.001800
Reduction in diameter at point of rupture........do...	.184
Reduction in area after rupture, per centum of original section........	54. 6
Position of rupture........	1 inch from neck
Character of broken surface........	silky; trace of granulation
Elongation of inch sections........	″.10, ″.15, ″.34*

No. 2569.

Marks, $\overset{8}{M}\,\overset{R_1}{T_{11}}\,\overset{T}{M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000633	.000200	0.	....	
6,250	25,000	.000833	.000200	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001133	.000133	....	....	
10,000	40,000	.001333	.000200	....	....	
11,250	45,000	.001467	.000134	....	....	
11,500	46,000	.001533	.000066	....	....	
11,750	47,000	.001567	.000034	....	....	
12,000	48,000	.001633	.000066	....	....	
12,250	49,000	.001667	.000034	....	....	
12,500	50,000	.001733	.000066	....	....	Elastic limit.
12,750	51,000	.002833	.001100	....	....	
13,000	52,000	.004700	.001867	....	....	
13,250	53,000	.005667	.000967	....	....	
13,500	54,000	.006467	.000800	....	....	
13,750	55,000	.007333	.000866	....	....	
14,000	56,000	.008233	.000900	....	....	
14,250	57,000	.009000	.000767	....	....	
14,500	58,000	.010167	.001167	....	....	
14,750	59,000	.010833	.000666	....	....	
15,000	60,000	.012033	.001200	....	....	
15,500	62,000	.013333	.001300	....	....	
16,000	64,000	.016500	.003167	....	....	
16,500	66,000	.018033	.001533	....	....	
17,000	68,000	.020000	.001967	....	....	
17,500	70,000	.023333	.003333	....	....	
18,000	72,000	.026333	.003000	....	....	
18,500	74,000	.029500	.003167	....	....	
19,000	76,000	.032500	.003000	....	....	
19,500	78,000	.035667	.003167	....	....	
20,000	80,000	.0400	.004333	....	....	
20,500	82,000	.0433	.0033	....	....	
21,000	84,000	.0533	.0100	....	....	
21,500	86,000	.0633	.0100	....	....	
22,000	88,000	.0700	.0067	....	....	
22,500	90,000	.0867	.0167	....	....	
22,900	91,600	.1400	.0533	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	91,600
Elastic limit per square inch of original section	do...	50,000
Elongation per inch after rupture	inch..	0.2133
Elongation per inch under strain at elastic limit	do...	.001733
Reduction in diameter at point of rupture	do...	.184
Reduction in area after rupture, per centum of original section		41.9
Position of rupture		1″.55 from neck
Character of broken surface		silky
Elongation of inch sections		″.11, ″.35*, ″.1

No. 665.

Marks, $^{8\,R_1\,T}_{M\,T_{12}\,I}$
Length, 4''.506.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000167	.000167	0.	....	
5, 000	10, 000	.000300	.000133	0.	....	
7, 500	15, 000	.000500	.000200	0.	....	
10, 000	20, 000	.000667	.000167	0.	....	
12, 500	25, 000	.000833	.000166	0.	....	
15, 000	30, 000	.001000	.000167	0.	....	
17, 500	35, 000	.001167	.000167	0.	....	
20, 000	40, 000	.001333	.000166	0.	....	
22, 500	45, 000	.001500	.000167	....	....	
25, 000	50, 000	.001667	.000167	....	....	
25, 500	51, 000	.001700	.000033	....	....	
26, 000	52, 000	.001733	.000033	....	....	
26, 500	53, 000	.001767	.000034	....	....	
27, 000	54, 000	.001800	.000033	....	....	
27, 500	55, 000	.001833	.000033	....	....	
28, 000	56, 000	.001867	.000034	....	....	
28, 500	57, 000	.001900	.000033	....	....	Elastic limit.
29, 000	58, 000	.001900	0.	....	....	
29, 500	59, 000	.001767	− .000133	....	....	
30, 000	60, 000	.001867	.000100	....	....	
30, 500	61, 000	.002567	.000700	....	....	
31, 000	62, 000	.003633	.001066	....	....	
47, 300	94, 600	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	57, 000
Compression per inch under stress at elastic limit	inch..	0. 001900
Ultimate strength per square inch of original section	pounds..	94, 600
Manner of failure		triple flexure

No. 666.

Marks, ${}^{8\ R_1\ T}_{M\ T_{11}\ O}$
Length, 4''.506.
Diameter, ''.799.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000167	.000167	0.	....	
5,000	10,000	.000333	.000166	0.	....	
7,500	15,000	.000500	.000167	0.	....	
10,000	20,000	.000667	.000167	0.	....	
12,500	25,000	.000833	.000166	0.	....	
15,000	30,000	.001000	.000167	0.	....	
17,500	35,000	.001167	.000167	0.	....	
20,000	40,000	.001333	.000166	0.	....	
22,500	45,000	.001500	.000167	0.	....	
25,000	50,000	.001667	.000167	0.	....	
25,500	51,000	.001667	0.	....	....	
26,000	52,000	.001700	.000033	....	....	
26,500	53,000	.001733	.000033	....	....	Elastic limit.
27,000	54,000	.002667	.000934	....	....	
27,500	55,000	.003467	.000800	....	....	
28,000	56,000	.004533	.001066	....	....	
45,680	91,360	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds..	53,000
Compression per inch under stress at elastic limit ....inch..	0.001733
Ultimate strength per square inch of original section ....pounds..	91,360
Manner of failure	triple flexure

No. 667.

Marks, $^{8\,R_1\,T}_{M\,R_{14}}$
Length, 3″.088.
Diameter, ″.709.
Sectional area, .395 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
395	1,000	0.	0.	0.	0.	Initial load.
1,975	5,000	.000200	.000200	0.	....	
3,950	10,000	.000450	.000250	0.	....	
5,925	15,000	.000650	.000200	0.	....	
7,900	20,000	.000800	.000150	0.	....	
9,875	25,000	.001000	.000200	0.	....	
11,850	30,000	.001150	.000150	0.	....	
13,825	35,000	.001300	.000150	0.	....	
15,800	40,000	.001500	.000200	.000100	.000100	
17,775	45,000	.001650	.000150	....	....	
19,750	50,000	.001850	.000200	....	....	
20,145	51,000	.001900	.000050	....	....	
20,540	52,000	.001950	.000050	....	....	
20,935	53,000	.002050	.000100	....	....	Elastic limit.
21,330	54,000	.002600	.000550	....	....	
21,725	55,000	.003900	.001300	....	....	
22,120	56,000	.005000	.001100	....	....	
44,390	112,250	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section............pounds..	53,000
Compression per inch under stress at elastic limit............inch..	0.002050
Ultimate strength per square inch of original section............pounds..	112,250
Manner of failure............	triple flexure

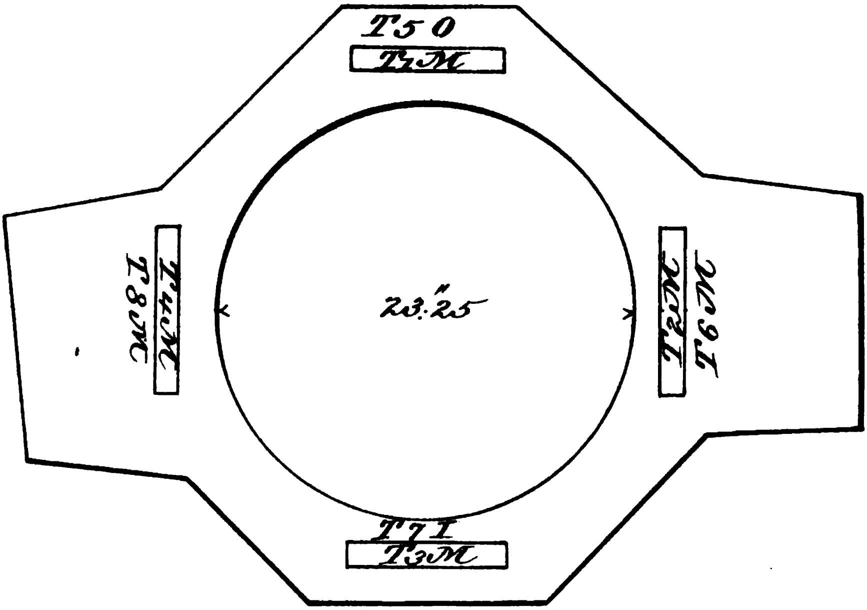
STEEL SPECIMENS FROM TRUNNION HOOP

FOR

8-INCH STEEL B. L. RIFLE NO 1.

8" Steel B. L. Rifle No. 1

Trunnion Hoop



STEEL SPECIMENS FROM TRUNNION HOOP FOR 8-INCH STEEL B. L. RIFLE NO. 1.

No. 2408.

Marks, $^{8\ R_1\ T\ H}_{\ \ T_1\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.		
2,500	10,000	.000333	.000166	0.		
3,750	15,000	.000467	.000134	0.		
5,000	20,000	.000617	.000150	0.		
6,250	25,000	.000750	.000133	0.		
7,500	30,000	.000917	.000167	0.		
8,750	35,000	.001067	.000150	0.		
10,000	40,000	.001233	.000166	0.		
11,250	45,000	.001383	.000150			
12,500	50,000	.001567	.000184			
12,750	51,000	.001583	.000016			
13,000	52,000	.001617	.000034			
13,250	53,000	.001667	.000050			
13,500	54,000	.001700	.000033			Elastic limit.
13,750	55,000	.001783	.000083			
14,000	56,000	.001933	.000150			
14,250	57,000	.002133	.000200			
14,500	58,000	.003117	.000984			
14,750	59,000	.004017	.000900			
15,000	60,000	.004850	.000833			
15,500	62,000	.006350	.001500			
16,000	64,000	.007750	.001400			
16,500	66,000	.009133	.001383			
17,000	68,000	.010667	.001534			
17,500	70,000	.012250	.001583			
18,000	72,000	.013833	.001583			
18,500	74,000	.015333	.001500			
19,000	76,000	.017083	.001750			
19,500	78,000	.018967	.001884			
20,000	80,000	.020967	.002000			
20,500	82,000	.022750	.001783			
21,000	84,000	.024833	.002083			
21,500	86,000	.027083	.002250			
22,000	88,000	.0300	.002917			
22,500	90,000	.0333	.0033			
23,000	92,000	.0350	.0017			
23,500	94,000	.0383	.0033			
24,000	96,000	.0433	.0050			
24,500	98,000	.0483	.0050			
25,000	100,000	.0533	.0050			
25,500	102,000	.0633	.0100			
26,000	104,000	.0767	.0134			
26,410	105,640	.1133	.0366			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	105,640
Elastic limit per square inch of original section	do...	54,000
Elongation per inch after rupture	inch..	0.1467
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	.134
Reduction in area after rupture, per centum of original section		41.9
Position of rupture		1″.53 from neck
Character of broken surface		silky; interspersed with granular metal
Elongation of inch sections		″.14, ″.35*, ″.14, ″.10, ″.08, ″.07

No. 2409.

Marks, $\substack{8\,R_1\,T\,H\\T_2\,M}$
Diameter, ''.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000150	.000150	0.	....	
2,500	10,000	.000333	.000183	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000633	.000133	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001117	.000150	....	....	
10,000	40,000	.001283	.000166	....	....	
11,250	45,000	.001450	.000167	....	....	
11,500	46,000	.001517	.000067	....	....	
11,750	47,000	.001550	.000033	....	....	
12,000	48,000	.001567	.000017	....	....	
12,250	49,000	.001600	.000033	....	....	
12,500	50,000	.001617	.000017	....	....	
12,750	51,000	.001633	.000016	....	....	
13,000	52,000	.001683	.000050	....	....	
13,250	53,000	.001717	.000034	....	....	
13,500	54,000	.001750	.000033	....	....	Elastic limit.
13,750	55,000	.001833	.000083	....	....	
14,000	56,000	.001967	.000134	....	....	
14,250	57,000	.002250	.000283	....	....	
14,500	58,000	.003333	.001083	....	....	
14,750	59,000	.003917	.000584	....	....	
15,000	60,000	.004767	.000850	....	....	
15,500	62,000	.006250	.001483	....	....	
16,000	64,000	.007583	.001333	....	....	
16,500	66,000	.009150	.001567	....	....	
17,000	68,000	.010833	.001683	....	....	
17,500	70,000	.012167	.001334	....	....	
18,000	72,000	.013667	.001500	....	....	
18,500	74,000	.015517	.001850	....	....	
19,000	76,000	.017000	.001483	....	....	
19,500	78,000	.018667	.001667	....	....	
20,000	80,000	.020667	.002000	....	....	
20,500	82,000	.022750	.002083	....	....	
21,000	84,000	.024917	.002167	....	....	
21,500	86,000	.0267	.001783	....	....	
22,000	88,000	.0300	.0033	....	....	
22,500	90,000	.0333	.0033	....	....	
23,000	92,000	.0350	.0017	....	....	
23,500	94,000	.0367	.0017	....	....	
24,000	96,000	.0417	.0050	....	....	
24,500	98,000	.0467	.0050	....	....	
25,000	100,000	.0517	.0050	....	....	
25,500	102,000	.0633	.0116	....	....	
26,000	104,000	.0783	.0150	....	....	
26,280	105,120	.0983	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	105,120
Elastic limit per square inch of original section	do...	54,000
Elongation per inch after rupture	inch..	0.1283
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do...	.104
Reduction in area after rupture, per centum of original section		33.5
Position of rupture		2''.15 from neck
Character of broken surface		silky, 50 per centum; granular, 50 per centum
Elongation of inch sections		''.11, ''.26*, ''.19, ''.09, ''.06, ''.06

No. 2410

Marks, $^{8}{}^{\text{R, T H}}_{\text{T, M}}$
Diameter, ″.564.
Sectional area, .25 square inch

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000117	.000117	0.	....	
2, 500	10, 000	.000283	.000166	0.	....	
3, 750	15, 000	.000450	.000167	0.	....	
5, 000	20, 000	.000600	.000150	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001100	.000167	....	....	
10, 000	40, 000	.001233	.000133	....	....	
11, 250	45, 000	.001400	.000167	....	....	
12, 500	50, 000	.001567	.000167	....	....	
12, 750	51, 000	.001600	.000033	....	....	
13, 000	52, 000	.001650	.000050	....	....	
13, 250	53, 000	.001683	.000033	....	....	
13, 500	54, 000	.001717	.000034	....	....	
13, 750	55, 000	.001750	.000033	....	....	
14, 000	56, 000	.001783	.000033	....	....	
14, 250	57, 000	.001833	.000050	....	....	
14, 500	58, 000	.001867	.000034	....	....	
14, 750	59, 000	.001917	.000050	....	....	
15, 000	60, 000	.001967	.000050	....	....	**Elastic limit.**
15, 250	61, 000	.002050	.000083	....	....	
15, 500	62, 000	.002567	.000517	....	....	
15, 750	63, 000	.003417	.000850	....	....	
16, 000	64, 000	.004500	.001083	....	....	
16, 250	65, 000	.005167	.000667	....	....	
16, 500	66, 000	.005783	.000616	....	....	
16, 750	67, 000	.006500	.000717	....	....	
17, 000	68, 000	.007333	.000833	....	....	
17, 250	69, 000	.008167	.000834	....	....	
17, 500	70, 000	.008833	.000666	....	....	
18, 000	72, 000	.010333	.001500	....	....	
18, 500	74, 000	.011717	.001384	....	....	
19, 000	76, 000	.013267	.001550	....	....	
19, 500	78, 000	.015083	.001816	....	....	
20, 000	80, 000	.016750	.001667	....	....	
20, 500	82, 000	.018583	.001833	....	....	
21, 000	84, 000	.020367	.001784	....	....	
21, 500	86, 000	.022333	.001966	....	....	
22, 000	88, 000	.024417	.002084	....	....	
22, 500	90, 000	.026833	.002416	....	....	
23, 000	92, 000	.029167	.002334	....	....	
23, 500	94, 000	.0300	.000833	....	....	
24, 000	96, 000	.0333	.0033	....	....	
24, 500	98, 000	.0367	.0034	....	....	
25, 000	100, 000	.0400	.0033	....	....	
25, 500	102, 000	.0467	.0067	....	....	
26, 000	104, 000	.0533	.0066	....	....	
26, 500	106, 000	.0617	.0084	....	....	
27, 000	108, 000	.0700	.0083	....	....	
27, 500	110, 000	.1017	.0317	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	110, 000
Elastic limit per square inch of original section	do...	60, 000
Elongation per inch after rupture	inch..	0. 1307
Elongation per inch under strain at elastic limit	do...	.001967
Reduction in diameter at point of rupture	do...	.134
Reduction in area after rupture, per centum of original section		41. 9
Position of rupture		½ inch from middle of stem
Character of broken surface		silky; interspersed with fine granulation
Elongation of inch sections		″.08, ″.11, ″.12, ″.30*, ″.12, ″.09

No. 2411.

Marks, $^{8}\text{R}_{1}{}^{\text{T H}}_{\text{T}_{4}\text{ M}}$

Diameter, ''.565.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.		
2,500	10,000	.000300	.000167	0.		
3,750	15,000	.000450	.000150	0.		
5,000	20,000	.000617	.000167	0.		
6,250	25,000	.000767	.000150	0.		
7,500	30,000	.000933	.000166	0.		
8,750	35,000	.001100	.000167			
10,000	40,000	.001233	.000133			
11,250	45,000	.001367	.000134			
12,500	50,000	.001550	.000183			
12,750	51,000	.001583	.000033			
13,000	52,000	.001617	.000034			
13,250	53,000	.001650	.000033			
13,500	54,000	.001683	.000033			
13,750	55,000	.001700	.000017			
14,000	56,000	.001733	.000033			
14,250	57,000	.001783	.000050			
14,500	58,000	.001867	.000084			
14,750	59,000	.001900	.000033			
15,000	60,000	.001950	.000050			Elastic limit.
15,250	61,000	.002033	.000083			
15,500	62,000	.002233	.000200			
15,750	63,000	.002733	.000500			
16,000	64,000	.003783	.001050			
16,250	65,000	.004500	.000717			
16,500	66,000	.005417	.000917			
16,750	67,000	.006183	.000766			
17,000	68,000	.007167	.000984			
17,250	69,000	.008000	.000833			
17,500	70,000	.008833	.000833			
18,000	72,000	.010200	.001367			
18,500	74,000	.011583	.001383			
19,000	76,000	.013167	.001584			
19,500	78,000	.014717	.001550			
20,000	80,000	.016417	.001700			
20,500	82,000	.018300	.001883			
21,000	84,000	.020083	.001783			
21,500	86,000	.022167	.002084			
22,000	88,000	.024333	.002166			
22,500	90,000	.026500	.002167			
23,000	92,000	.028833	.002333			
23,500	94,000	.031250	.002417			
24,000	96,000	.032500	.001250			
24,500	98,000	.0367	.0042			
25,000	100,000	.0400	.0033			
25,500	102,000	.0467	.0067			
26,000	104,000	.0517	.0050			
26,500	106,000	.0583	.0066			
27,000	108,000	.0700	.0117			
27,500	110,000	.0950	.0250			
27,520	110,080	.1050	.0100			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	110,080
Elastic limit per square inch of original section	do...	60,000
Elongation per inch after rupture	inch..	0.1417
Elongation per inch under strain at elastic limit	do...	.001950
Reduction in diameter at point of rupture	do...	.125
Reduction in area after rupture, per centum of original section		39.2
Position of rupture		1''.55 from neck
Character of broken surface		silky; traces of granulation
Elongation of inch sections		''.13, ''.30, ''.14, ''.11, ''.10, ''.07

No. 2412.

Marks, $^{8\,\mathrm{R}\,\mathrm{T}\,\mathrm{H}}_{\mathrm{T},\,\mathrm{O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000117	.000117	0.	....	
2,500	10,000	.000283	.000166	0.	....	
3,750	15,000	.000450	.000167	0.	....	
5,000	20,000	.000617	.000167	0.	....	
6,250	25,000	.000767	.000150	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001083	.000150	....	....	
10,000	40,000	.001233	.000150	....	....	
11,250	45,000	.001400	.000167	....	....	
12,500	50,000	.001583	.000183	....	....	
12,750	51,000	.001633	.000050	....	....	
13,000	52,000	.001683	.000050	....	....	
13,250	53,000	.001717	.000034	....	....	
13,500	54,000	.001750	.000033	....	....	
13,750	55,000	.001767	.000017	....	....	
14,000	56,000	.001833	.000066	....	....	Elastic limit.
14,250	57,000	.001933	.000100	....	....	
14,500	58,000	.002217	.000284	....	....	
14,750	59,000	.002700	.000483	....	....	
15,000	60,000	.003667	.000967	....	....	
15,500	62,000	.005200	.001583	....	....	
16,000	64,000	.006667	.001467	....	....	
16,500	66,000	.008250	.001583	....	....	
17,000	68,000	.009833	.001583	....	....	
17,500	70,000	.011333	.001500	....	....	
18,000	72,000	.013000	.001667	....	....	
18,500	74,000	.014833	.001833	....	....	
19,000	76,000	.016667	.001834	....	....	
19,500	78,000	.018083	.001416	....	....	
20,000	80,000	.020033	.001950	....	....	
20,500	82,000	.022050	.002017	....	....	
21,000	84,000	.024200	.002150	....	....	
21,500	86,000	.026567	.002367	....	....	
22,000	88,000	.029167	.002600	....	....	
22,500	90,000	.030833	.001666	....	....	
23,000	92,000	.0350	.004167	....	....	
23,500	94,000	.0367	.0017	....	....	
24,000	96,000	.0417	.0050	....	....	
24,500	98,000	.0467	.0050	....	....	
25,000	100,000	.0517	.0050	....	....	
25,500	102,000	.0600	.0083	....	....	
26,000	104,000	.0717	.0117	....	....	
26,480	105,920	.1100	.0383	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	105,920
Elastic limit per square inch of original section	do...	56,000
Elongation per inch after rupture	inch..	0.1517
Elongation per inch under strain at elastic limit	do...	.001833
Reduction in diameter at point of rupture	do...	.124
Reduction in area after rupture, per centum of original section		39.2
Position of rupture		¾ inch from middle of stem
Character of broken surface		silky; interspersed with granular metal
Elongation of inch sections		″.13, ″.10, ″.11, ″.30*, ″.14, ″.13

No. 2413.

Marks, $^{8\,\mathrm{R},\,\mathrm{T\,H}}_{\mathrm{T,\,M}}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000117	.000117	0.		
2, 500	10, 000	.000283	.000166	0.		
3, 750	15, 000	.000433	.000150	0.		
5, 000	20, 000	.000567	.000134	—.000017	—.000017	
6, 250	25, 000	.000733	.000166	—.000017	0.	
7, 500	30, 000	.000900	.000167	—.000017	0.	
8, 750	35, 000	.001033	.000133	—.000017	0.	
10, 000	40, 000	.001217	.000184	—.000017	0.	
11, 250	45, 000	.001400	.000183			
12, 500	50, 000	.001567	.000167			
12, 750	51, 000	.001583	.000016			
13, 000	52, 000	.001633	.000050			
13, 250	53, 000	.001717	.000084			
13, 500	54, 000	.001783	.000066			Elastic limit.
13, 750	55, 000	.001933	.000150			
14, 000	56, 000	.002517	.000584			
14, 250	57, 000	.003333	.000816			
14, 500	58, 000	.004083	.000750			
14, 750	59, 000	.005000	.000917			
15, 000	60, 000	.005833	.000833			
15, 500	62, 000	.007167	.001334			
16, 000	64, 000	.008400	.001233			
16, 500	66, 000	.009750	.001350			
17, 000	68, 000	.011333	.001583			
17, 500	70, 000	.012833	.001500			
18, 000	72, 000	.014900	.002067			
18, 500	74, 000	.016500	.001600			
19, 000	76, 000	.018167	.001667			
19, 500	78, 000	.019767	.001600			
20, 000	80, 000	.021667	.001900			
20, 500	82, 000	.023833	.002166			
21, 000	84, 000	.026117	.002284			
21, 500	86, 000	.028550	.002433			
22, 000	88, 000	.031500	.002950			
22, 500	90, 000	.0333	.0018			
23, 000	92, 000	.0367	.0034			
23, 500	94, 000	.0400	.0033			
24, 000	96, 000	.0450	.0050			
24, 500	98, 000	.0500	.0050			
25, 000	100, 000	.0583	.0083			
25, 500	102, 000	.0667	.0084			
26, 000	104, 000	.0817	.0150			
26, 300	105, 200	.1133	.0316			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	105, 200
Elastic limit per square inch of original section	do...	54, 000
Elongation per inch after rupture	inch..	0. 1283
Elongation per inch under strain at elastic limit	do...	.001783
Reduction in diameter at point of rupture	do...	.075
Reduction in area after rupture, per centum of original section		24. 6
Position of rupture		″.85 from neck
Character of broken surface		granular; radiating from a point in the circumference
Elongation of inch sections		″.08, ″.10, ″.10, ″.12, ″.15, ″.22*

No. 2414.

Marks, $^{S\,R\,T\,H}_{\quad T,\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000117	.000117	0.	....	
2, 500	10, 000	.000283	.000166	0.	....	
3, 750	15, 000	.000450	.000167	0.	....	
5, 000	20, 000	.000600	.000150	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001083	.000150	0.	....	
10, 000	40, 000	.001250	.000167	0.	....	
11, 250	45, 000	.001400	.000150	....	....	
12, 500	50, 000	.001600	.000200	....	....	
13, 750	55, 000	.001783	.000183	....	....	
15, 000	60, 000	.001967	.000184	....	....	
15, 250	61, 000	.002017	.000050	....	....	
15, 500	62, 000	.002050	.000033	....	....	
15, 750	63, 000	.002083	.000033	....	....	
16, 000	64, 000	.002117	.000034	....	....	
16, 250	65, 000	.002167	.000050	....	....	
16, 500	66, 000	.002233	.000066	....	....	Elastic limit.
16, 750	67, 000	.002333	.000100	....	....	
17, 000	68, 000	.002500	.000167	....	....	
17, 250	69, 000	.002717	.000217	....	....	
17, 500	70, 000	.003250	.000533	....	....	
18, 000	72, 000	.005000	.001750	....	....	
18, 500	74, 000	.007167	.002167	....	....	
19, 000	76, 000	.009117	.001950	....	....	
19, 500	78, 000	.011083	.001966	....	....	
20, 000	80, 000	.012767	.001684	....	....	
20, 500	82, 000	.014517	.001750	....	....	
21, 000	84, 000	.016083	.001566	....	....	
21, 500	86, 000	.017833	.001750	....	....	
22, 000	88, 000	.019833	.002000	....	....	
22, 500	90, 000	.021917	.002084	....	....	
23, 500	94, 000	.024250	.002333	....	....	
24, 000	96, 000	.026500	.002250	....	....	
24, 500	98, 000	.029333	.002833	....	....	
25, 000	100, 000	.032000	.002667	....	....	
25, 500	102, 000	.0350	.0030	....	....	
26, 000	104, 000	.0367	.0017	....	....	
26, 500	106, 000	.0417	.0050	....	....	
27, 000	108, 000	.0483	.0066	....	....	
27, 500	110, 000	.0583	.0100	....	....	
28, 000	112, 000	.0833	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	112, 000
Elastic limit per square inch of original section	do...	66, 000
Elongation per inch after rupture	inch..	0. 1300
Elongation per inch under strain at elastic limit	do...	.002233
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44. 6
Position of rupture		″.80 from neck
Character of broken surface		silky; interspersed with fine granulation
Elongation of inch sections		″.09, ″.10, ″.09, ″.09, ″.11, ″.30*

No. 2415.

Marks, $^{8}\genfrac{}{}{0pt}{}{R_1\ T\ H}{T_8\ M}$
Diameter, ″.565.
Sectional area, .25 square inch.

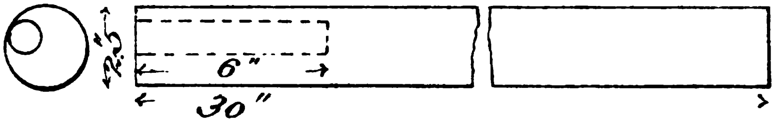
Applied loads.		Elongation per inch	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
10, 000	40, 000	.001300	.000167	0.	....	
11, 250	45, 000	.001467	.000167	....	....	
12, 500	50, 000	.001650	.000183	....	....	
12, 750	51, 000	.001700	.000050	....	....	
13, 000	52, 000	.001717	.000017	....	....	
13, 250	53, 000	.001750	.000033	....	....	
13, 500	54, 000	.001850	.000100	....	....	
13, 750	55, 000	.001883	.000033	....	....	Elastic limit.
14, 000	56, 000	.001967	.000084	....	....	
14, 250	57, 000	.002100	.000133	....	....	
14, 500	58, 000	.002517	.000417	....	....	
14, 750	59, 000	.003083	.000566	....	....	
15, 000	60, 000	.003833	.000750	....	....	
15, 500	62, 000	.005200	.001367	....	....	
16, 000	64, 000	.006500	.001300	....	....	
16, 500	66, 000	.007883	.001383	....	....	
17, 000	68, 000	.009417	.001534	....	....	
17, 500	70, 000	.011167	.001750	....	....	
18, 000	72, 000	.012663	.001466	....	....	
18, 500	74, 000	.014000	.001367	....	....	
19, 000	76, 000	.015667	.001667	....	....	
19, 500	78, 000	.017333	.001666	....	....	
20, 000	80, 000	.019000	.001667	....	....	
20, 500	82, 000	.021000	.002000	....	....	
21, 000	84, 000	.023267	.002267	....	....	
21, 500	86, 000	.025500	.002233	....	....	
22, 000	88, 000	.027683	.002183	....	....	
22, 500	90, 000	.030583	.002900	....	....	
23, 000	92, 000	.0317	.001117	....	....	
23, 500	94, 000	.0350	.0033	....	....	
24, 000	96, 000	.0367	.0017	....	....	
24, 500	98, 000	.0433	.0066	....	....	
25, 000	100, 000	.0483	.0050	....	....	
25, 500	102, 000	.0533	.0050	....	....	
26, 000	104, 000	.0617	.0084	....	....	
26, 500	106, 000	.0750	.0133	....	....	
26, 950	107, 800	.1150	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	107, 800
Elastic limit per square inch of original section..........do...	55, 000
Elongation per inch after rupture..........inch..	0. 1283
Elongation per inch under strain at elastic limit..........do...	.001883
Reduction in diameter at point of rupture..........do...	.055
Reduction in area after rupture, per centum of original section..........	18. 3
Position of rupture..........	″.30 from middle of stem
Character of broken surface..........	granular; dull eccentric spot
Elongation of inch sections..........	″.09, ″.12, ″.15, ″.19*, ″.13, ″.09

8" Steel B. L. Rifle No. 1

Coupling pin



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No. 2707.

Marks, $^{8\text{ in}}_{\text{C P}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000110	.000100	0.	....	
2,500	10,000	.000233	.000133	0.	....	
3,750	15,000	.000400	.000167	0.	....	
5,000	20,000	.000533	.000133	0.	....	
6,250	25,000	.000733	.000200	0.	....	
7,500	30,000	.000900	.000167	0.	....	
8,750	35,000	.001067	.000167	0.	....	
10,000	40,000	.001233	.000166	0.	....	
11,250	45,000	.001367	.000134	....	....	
11,500	46,000	.001400	.000033	....	....	
11,750	47,000	.001467	.000067	....	....	
12,000	48,000	.001500	.000033	....	....	
12,250	49,000	.001533	.000033	....	....	
12,500	50,000	.001600	.000067	....	....	
12,750	51,000	.001633	.000033	....	....	
13,000	52,000	.001667	.000034	....	....	
13,250	53,000	.001700	.000033	....	....	
13,500	54,000	.001700	0.	....	....	
13,750	55,000	.001733	.000033	....	....	
14,000	56,000	.001767	.000034	....	....	
14,250	57,000	.001867	.000100	....	....	
14,500	58,000	.001967	.000100	....	....	
14,750	59,000	.002000	.000033	....	....	
15,000	60,000	.002033	.000033	....	....	
15,250	61,000	.002067	.000034	....	....	
15,500	62,000	.002067	0.	....	....	
15,750	63,000	.002100	.000033	....	....	
16,000	64,000	.002133	.000033	....	....	
16,250	65,000	.002167	.000034	....	....	
16,500	66,000	.002167	0.	....	....	
16,750	67,000	.002233	.000066	....	....	
17,000	68,000	.002333	.000100	....	....	
17,250	69,000	.002367	.000034	....	....	
17,500	70,000	.002400	.000033	....	....	Elastic limit.
17,750	71,000	.002567	.000167	....	....	
18,000	72,000	.002733	.000166	....	....	
18,250	73,000	.002933	.000200	....	....	
18,500	74,000	.003333	.000400	....	....	
18,750	75,000	.003800	.000467	....	....	
19,000	76,000	.004233	.000433	....	....	
19,500	78,000	.005767	.001534	....	....	
20,000	80,000	.006833	.001066	....	....	
20,500	82,000	.008367	.001534	....	....	
21,000	84,000	.010000	.001633	....	....	
21,500	86,000	.011167	.001167	....	....	
22,000	88,000	.012667	.001500	....	....	
22,500	90,000	.013900	.001233	....	....	
23,000	92,000	.0150	.0011	....	....	
23,500	94,000	0167	.0017	....	....	
25,000	100,000	.0217	.0050	....	....	
26,000	104,000	.0267	.0050	....	....	
27,000	108,000	.0300	.0033	....	....	
28,000	112,000	.0333	.0033	....	....	
29,000	116,000	.0400	.0067	....	....	
30,000	120,000	.0567	.0167	....	....	
31,050	124,200	.0967	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	124,200
Elastic limit per square inch of original section	do	70,000
Elongation per inch after rupture	inch	0.1133
Elongation per inch under strain at elastic limit	do	.002400
Reduction in diameter at point of rupture	do	.064
Reduction in area after rupture, per centum of original section		21.4
Position of rupture		″.90 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.06, ″.13, ″.15*

TABULATION OF TENSION SPECIMENS FROM TUBE FOR 8-INCH STEEL B. L. RIFLE NO. 1.

No. of test.	Position in gun.	Location of specimen.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.	Specific gravity.	Hardness.
			Pounds.	*Pounds.*	*Per. ct.*	*Per. ct.*			
2335	Breech	Inside	40,000	79,760	22.7	47.2	Silky	....	....
2336	..do	Outside	44,000	83,440	22.7	49.7	Silky; trace of granulation.	....	....
2337	..do	Middle	43,000	83,400	23.0	49.7	Silky; slightly granular.	....	....
2338	..do	Outside	49,000	89,500	26.5	54.6	Silky	....	....
2339	..do	Inside	46,000	84,400	27.0	59.8	....do	....	....
2332	Muzzle	..do	56,000	95,920	16.7	30.6	Granular; dull flaky spot.	7.8561	19.81
2333	..do	Outside	48,000	89,700	23.3	47.2	Silky; interspersed with granulation.	....	....
2334	..do	Middle	47,000	90,560	19.0	27.6	Granular; dull flaky spot.	....	....
*2564	Breech	Inside	49,000	86,840	23.3	49.7	Silky	....	....
*2565	..do	Outside	51,000	90,400	20.0	52.2	....do	....	....
*2566	..do	Middle	46,000	86,200	21.0	52.2	....do	....	....
*2567	Muzzle	Inside	53,000	94,320	17.0	21.4	Granular; flaky spot.	....	....
*2568	..do	Outside	52,000	94,080	19.7	54.6	Silky; trace of granulation.	....	....
*2569	..do	Middle	50,000	91,600	21.3	41.9	Silky	....	....

* Second slice after retreatment.

TABULATION OF COMPRESSION SPECIMENS FROM TUBE FOR 8-INCH STEEL B. L. RIFLE NO. 1.

No. of test.	Position in gun.	Location of specimens.	Elastic limit per square inch.	Ultimate strength per square inch.	Manner of failure.
			Pounds.	*Pounds.*	
638	Breech	Inside	39,000	70,360	Triple flexure.
637	......do	Outside	47,000	81,300	Do.
639	......do	Middle	40,000	72,810	Do.
642	......do	Radial	44,000	93,700	Do.
643	......do	....do	42,000	89,880	Do.
639½	Muzzle	Inside	56,000	83,560	Do.
640	......do	Outside	52,000	87,300	Do.
641	......do	Middle	51,000	83,800	Do.
644	......do	Radial	51,000	....	Shortened ″.155.
645	......do	....do	49,000	....	Shortened ″.170.
*662	Breech	Inside	49,000	85,760	Triple flexure.
*663	......do	Outside	50,000	93,400	Do.
*664	......do	Radial	47,000	97,040	Do.
*665	Muzzle	Inside	57,000	94,600	Do.
*666	......do	Outside	53,000	91,360	Do.
*667	......do	Radial	53,000	112,250	Do.

* Second slice after retreatment.

TABULATION OF TENSION SPECIMENS FROM TRUNNION-HOOP AND COUPLING-PIN FOR 8-INCH STEEL B. L. RIFLE NO. 1.

No. of test.	Position in gun.	Location of specimens.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.
			Pounds.	*Pounds.*	*Per. ct.*	*Per. ct.*	
2408	T. hoop	Middle	54, 000	105, 640	14. 7	41. 9	Silky, with granular metal.
2409	....do	..do	54, 000	105, 120	12. 8	33. 5	Silky, 50 per cent.; granular 50 per cent.
2410	....do	..do	60, 000	110, 000	13. 7	41. 9	Silky, with fine granulation.
2411	....do	..do	60, 000	110, 080	14. 2	39. 2	Silky; traces of granulation.
2412	....do	Outside	56, 000	105, 920	15. 2	39. 2	Silky, with granular metal.
2413	....do	Middle	54, 000	105, 200	12. 8	24. 6	Granular.
2414	....do	Inside	66, 000	112, 000	13. 0	44. 6	Silky, with fine granulation.
2415	....do	Middle	55, 000	107, 800	12. 8	18. 3	Granular; dull spot.
2707	Coupling-pin	End	70, 000	124, 200	11, 3	21. 4	Do.

SPECIMENS FROM STEEL TUBES

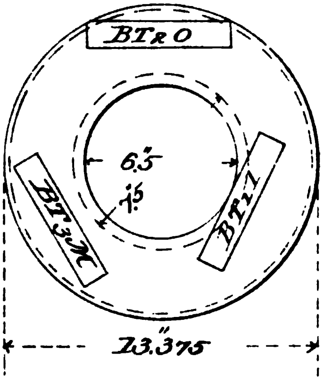
FOR

8-INCH CONVERTED RIFLES.

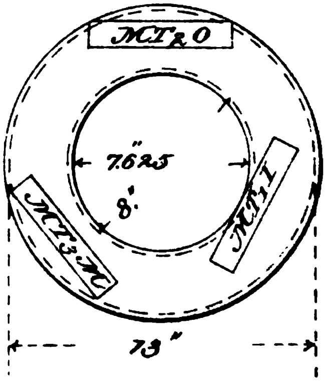
Tube 8" converted Rifle

General drawing showing positions from whence specimens were taken.

Breech end



Muzzle end



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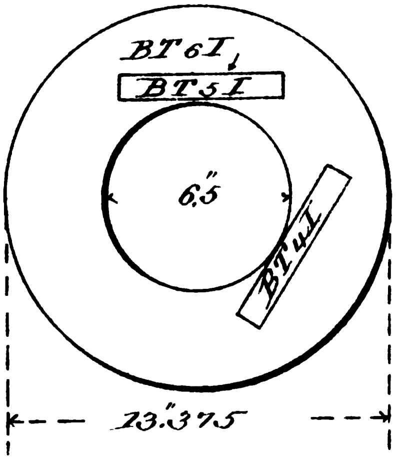
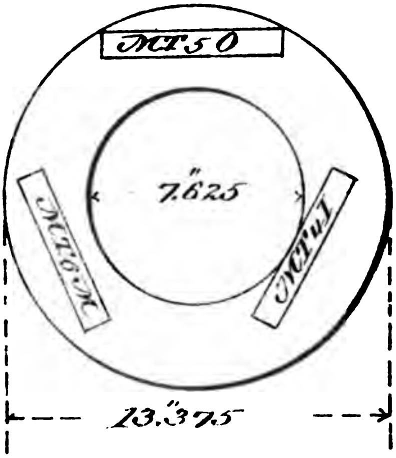
Tube No. 7   8" converted Rifle

Additional specimens





SPECIMENS FROM STEEL TUBES FOR 8-INCH CONVERTED RIFLES.

No. 2341.

Marks, $\frac{8\ T_7}{B\ T_4}\ I$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000267	.000134	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001100	.000167	0.	....	
9, 000	36, 000	.001133	.000033	....	....	
9, 250	37, 000	.001167	.000034	....	....	Elastic limit.
9, 500	38, 000	.009000	.007833	....	....	
9, 750	39, 000	.011700	.002700	....	....	
10, 000	40, 000	.012667	.000967	....	....	
10, 250	41, 000	.013833	.001166	....	....	
10, 500	42, 000	.015167	.001334	....	....	
10, 750	43, 000	.016333	.001166	....	....	
11, 000	44, 000	.017667	.001334	....	....	
11, 250	45, 000	.018833	.001166	....	....	
11, 500	46, 000	.020400	.001567	....	....	
11, 750	47, 000	.021500	.001100	....	....	
12, 000	48, 000	.023733	.002233	....	....	
12, 250	49, 000	.025333	.001600	....	....	
12, 500	50, 000	.027067	.001734	....	....	
13, 000	52, 000	.030500	.003433	....	....	
13, 500	54, 000	.034667	.004167	....	....	
14, 000	56, 000	.039000	.004333	....	....	
14, 500	58, 000	.044667	.005667	....	....	
15, 000	60, 000	.050833	.006166	....	....	
15, 500	62, 000	.058333	.007500	....	....	
16, 000	64, 000	.0667	.008367	....	....	
16, 500	66, 000	.0767	.0100	....	....	
17, 000	68, 000	.0933	.0166	....	....	
17, 500	70, 000	.1300	.0367	....	....	
17, 680	70, 720	.1700	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	70, 720
Elastic limit per square inch of original section	do ..	37, 000
Elongation per inch after rupture	inch..	0.1800
Elongation per inch under strain at elastic limit	do...	.001167
Reduction in diameter at point of rupture	do...	.064
Reduction in area after rupture, per centum of original section		21. 4
Position of rupture		1″.45 from neck

Character of broken surface, granular; radiating from a defective spot at circumference; opened cracks in surface of stem.

Elongation of inch sections..″.16, ″.23*, ″.15

No. 2342.

Marks, $^{8\ T_7}_{B\ T_8\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000833	.000166	0.	....	
7,500	30,000	.001000	.000167	0.	....	
7,750	31,000	.001033	.000033	....	....	
8,000	32,000	.001067	.000034	....	....	
8,250	33,000	.001100	.000033	....	....	
8,500	34,000	.001167	.000067	....	....	Elastic limit.
8,750	35,000	.008167	.007000	....	....	
9,000	36,000	.009333	.001166	....	....	
9,250	37,000	.010400	.001067	....	....	
9,500	38,000	.011333	.000933	....	....	
9,750	39,000	.012167	.000834	....	....	
10,000	40,000	.013667	.001500	....	....	
10,500	42,000	.015667	.002000	....	....	
11,000	44,000	.018333	.002666	....	....	
11,500	46,000	.021167	.002834	....	....	
12,000	48,000	.024033	.002866	....	....	
12,500	50,000	.027367	.003334	....	....	
13,000	52,000	.031100	.003733	....	....	
13,500	54,000	.035400	.004300	....	....	
14,000	56,000	.039667	.004267	....	....	
14,500	58,000	.044767	.005100	....	....	
15,000	60,000	.050700	.005933	....	....	
15,500	62,000	.0567	.0060	....	....	
16,000	64,000	.0667	.0100	....	....	
16,500	66,000	.0800	.0133	....	....	
17,000	68,000	.0967	.0167	....	....	
17,480	69,920	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	69,920
Elastic limit per square inch of original section	do...	34,000
Elongation per inch after rupture	inch..	0.1333
Elongation per inch under strain at elastic limit	do...	.001167
Reduction in diameter at point of rupture	do...	.054
Reduction in area after rupture, per centum of original section		18.3
Position of rupture		½ inch from neck

Character of broken surface, granular; defective spot near circumference; opened cracks in surface of stem.

Elongation of inch sections....................″.11, ″.13, ″.16*

No. 2343.

Marks, $^{8\,T_7}_{B\,T_6\,1}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000633	.000133	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001100	.000133	0.	....	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001167	.000034	....	....	Elastic limit.
9,500	38,000	.010167	.009000	....	....	
9,750	39,000	.011033	.000866	....	....	
10,000	40,000	.012067	.001034	....	....	
10,500	42,000	.014700	.002633	....	....	
11,000	44,000	.017400	.002700	....	....	
11,500	46,000	.020000	.002600	....	....	
12,000	48,000	.023333	.003333	....	....	
12,500	50,000	.026500	.003167	....	....	
13,000	52,000	.030000	.003500	....	....	
13,500	54,000	.034000	.004000	....	....	
14,000	56,000	.038333	.004333	....	....	
14,500	58,000	.0433	.004967	....	....	
15,000	60,000	.0533	.0100	....	....	
15,500	62,000	.0600	.0067	....	....	
16,000	64,000	.0733	.0133	....	....	
16,500	66,000	.0867	.0134	....	....	
17,000	68,000	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	68,000
Elastic limit per square inch of original section ....do...	37,000
Elongation per inch after rupture..inch..	0.1067
Elongation per inch under strain at elastic limit..do...	.001167
Reduction in diameter at point of rupture ....do...	.044
Reduction in area after rupture, per centum of original section	15.0
Position of rupture..	1".3 from neck

Character of broken surface, granular; defective spot at circumference; opened crack in surface of stem.

Elongation of inch sections..".09*, ".13*, ".10

No. 2344.

Marks, $\overset{8}{\mathrm{M}}\ \overset{\mathrm{T,}}{\mathrm{T}_4}\ \mathrm{I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	. 000133	. 000133	0.	....	
2, 500	10, 000	. 000267	. 000134	0.	....	
3, 750	15, 000	. 000433	. 000166	0.	....	
5, 000	20, 000	. 000567	. 000134	0.	....	
6, 250	25, 000	. 000733	. 000166	0.	....	
7, 500	30, 000	. 000900	. 000167	. 000033	. 000033	
8, 750	35, 000	. 001067	. 000167	. 000033	0.	
10, 000	40, 000	. 001233	. 000166	. 000033	0.	
10, 250	41, 000	. 001267	000034	....	....	Elastic limit.
10, 500	42, 000	. 011700	. 010433	....	....	
10, 750	43, 000	. 012167	. 000467	....	....	
11, 000	44, 000	. 013167	. 001000	....	....	
11, 250	45, 000	. 014000	. 000833	....	....	
11, 500	46, 000	. 015033	. 001033	....	....	
11, 750	47, 000	. 016000	. 000967	....	....	
12, 000	48, 000	. 017367	. 001367	....	....	
12, 250	49, 000	. 018167	. 000800	....	....	
12, 500	50, 000	. 019333	. 001166	....	....	
13, 000	52, 000	. 022033	. 002700	....	....	
13, 500	54, 000	. 025000	. 002967	....	....	
14, 000	56, 000	. 027667	. 002667	....	....	
14, 500	58, 000	. 030733	. 003066	....	....	
15, 000	60, 000	. 034167	. 003434	....	....	
15, 500	62, 000	. 038100	. 003933	....	....	
16, 000	64, 000	. 042667	. 004567	....	....	
16, 500	66, 000	. 048000	. 005333	....	....	
17, 000	68, 000	. 053333	. 005333	....	....	
17, 500	70, 000	. 0600	. 006667	....	....	
18, 000	72, 000	. 0667	. 0067	....	....	
18, 500	74, 000	. 0800	. 0133	....	....	
19, 000	76, 000	. 1000	. 0200	....	....	
19, 500	78, 000	. 1233	. 0233	....	....	
19, 720	78, 880	. 1900	. 0667	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 78, 880
Elastic limit per square inch of original section ....do... 41, 000
Elongation per inch after rupture...inch.. 0. 2600
Elongation per inch under strain at elastic limit ....do... .00126;
Reduction in diameter at point of rupture..do... .144
Reduction of area after rupture, per centum of original section.............................. 44. 6
Position of rupture ....″. 90 from neck
Character of broken surface ....silky
Elongation of inch sections..″.40*, ″.20, ″.18

No. 2346.

Marks, $^{\text{S T,}}_{\text{M T, O}}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch*	
250	1,000	0.	0.	0.	0.-	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000467	.000134	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001100	.000133	0.	....	
9,500	38,000	.001233	.000133	....	....	
9,750	39,000	.001300	.000067	....	....	Elastic limit.
10,000	40,000	.010000	.008700	....	....	
10,250	41,000	.010733	.000733	....	....	
10,500	42,000	.011800	.001067	....	....	
10,750	43,000	.012700	.000900	....	....	
11,000	44,000	.013600	.000900	....	....	
11,250	45,000	.014500	.000900	....	....	
11,500	46,000	.015733	.001233	....	....	
11,750	47,000	.016767	.001034	....	....	
12,000	48,000	.018000	.001233	....	....	
12,250	49,000	.019000	.001000	....	....	
12,500	50,000	.020400	.001400	....	....	
13,000	52,000	.023167	.002767	....	....	
13,500	54,000	.026333	.003166	....	....	
14,000	56,000	.029500	.003167	....	....	
14,500	58,000	.033333	.003833	....	....	
15,000	60,000	.037167	.003834	....	....	
15,500	62,000	.041433	.004266	....	....	
16,000	64,000	.047000	.005567	....	....	
16,500	66,000	.053333	.006333	....	....	
17,000	68,000	.060000	.006667	....	....	
17,500	70,000	.070000	.010000	....	....	
18,000	72,000	.0833	.0133	....	....	
18,500	74,000	.1000	.0167	....	....	
19,000	76,000	.1367	.0367	....	....	
19,110	76,440	.1733	.0366	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76,440
Elastic limit per square inch of original section	do...	39,000
Elongation per inch after rupture	inch..	0.2700
Elongation per inch under strain at elastic limit	do...	.001300
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		1″.55 from neck
Character of broken surface		silky
Elongation of inch sections		″.16, ″.42* ″.23

No. 2345.

Marks, $\overset{8\ \mathrm{T},}{\mathrm{M\ T.\ M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	. 000167	. 000167	0.	....	
2, 500	10, 000	. 000300	. 000133	0.	....	
3, 750	15, 000	. 000433	. 000133	0.	....	
5, 000	20, 000	. 000600	. 000167	0.	....	
6, 250	25, 000	. 000767	. 000167	0.	....	
7, 500	30, 000	. 000933	. 000166	0.	....	
8, 750	35, 000	. 001100	. 000167	0.	....	
9, 000	36, 000	. 001133	. 000033	....	....	
9, 250	37, 000	. 001167	. 000034	....	....	Elastic limit.
9, 500	38, 000	. 005333	. 004166	....	....	
9, 750	39, 000	. 008067	. 002734	....	....	
10, 000	40, 000	. 009167	. 001100	....	....	
10, 500	42, 000	. 011000	. 001833	....	....	
11, 000	44, 000	. 012833	. 001833	....	....	
11, 500	46, 000	. 014833	. 002000	....	....	
12, 000	48, 000	. 017000	. 002167	....	....	
12, 500	50, 000	. 019000	. 002000	....	....	
13, 000	52, 000	. 021500	. 002500	....	....	
13, 500	54, 000	. 024000	. 002500	....	....	
14, 000	56, 000	. 026833	. 002833	....	....	
14, 500	58, 000	. 030000	. 003167	....	....	
15, 000	60, 000	. 033500	. 003500	....	....	
15, 500	62, 000	. 037667	. 004167	....	....	
16, 000	64, 000	. 041667	. 004000	....	....	
16, 500	66, 000	. 046833	. 005166	....	....	
17, 000	68, 000	. 052667	. 005834	....	....	
17, 500	70, 000	. 059333	. 006666	....	....	
18, 000	72, 000	. 0667	. 007367	....	....	
18, 500	74, 000	. 0767	. 0100	....	....	
19, 000	76, 000	. 0933	. 0166	....	....	
19, 500	78, 000	. 1200	. 0267	....	....	
19, 790	79, 160	. 1667	. 0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	79, 160
Elastic limit per square inch of original section	do...	37. 000
Elongation per inch after rupture	inch..	0. 2367
Elongation per inch under strain at elastic limit	do...	. 001167
Reduction in diameter at point of rupture	do...	. 144
Reduction in area after rupture, per centum of original section		44. 6
Position of rupture		″.85 from neck
Character of broken surface		silky
Elongation of inch sections		″.36*, ″.21, ″.14

NEW TUBE NO. 7.

No. 2662.

Marks, $\substack{8\ \mathrm{Cn\ R_7\ T} \\ \mathrm{B\ T_7\ I}}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000267	.000134	0.	....	
3, 750	15, 000	.000467	.000200	0.	....	
5, 000	20, 000	.000567	.000100	0.	....	
6, 250	25, 000	.000767	.000200	0.	....	
7, 500	30, 000	.000900	.000133	0.	....	
7, 750	31, 000	.000933	.000033	....	....	
8, 000	32, 000	.001000	.000067	....	....	
8, 250	33, 000	.001100	.000100	....	....	Elastic limit.
8, 500	34, 000	.001167 .004333	000067 .003166	....	....	
8, 750	35, 000	.004867	.000534	....	....	
9, 000	36, 000	.005667	.000800	....	....	
9, 250	37, 000	.006333	.000666	....	....	
9, 500	38, 000	.007500	.001167	....	....	
9, 750	39, 000	.008500	.001000	....	....	
10, 000	40, 000	.009667	.001167	....	....	
10, 250	41, 000	.010667	.001000	....	....	
10, 500	42, 000	.011833	.001166	....	....	
10, 750	43, 000	.013000	.001167	....	....	
11, 000	44, 000	.014500	.001500	....	....	
11, 250	45, 000	.015667	.001167	....	....	
11, 500	46, 000	.017000	.001333	....	....	
11, 750	47, 000	.018333	.001333	....	....	
12, 000	48, 000	.020000	.001667	....	....	
12, 250	49, 000	.021333	.001333	....	....	
12, 500	50, 000	.023333	.002000	....	....	
13, 000	52, 000	.027000	.003667	....	....	
13, 500	54, 000	.031000	.004000	....	....	
14, 000	56, 000	.035667	.004667	....	....	
14, 500	58, 000	.040667	.005000	....	....	
15, 000	60, 000	.0500	.009333	....	....	
15, 500	62, 000	.0600	.0100	....	....	
16, 000	64, 000	.0700	.0100	....	....	
16, 500	66, 000	.0800	.0100	....	....	
17, 000	68, 000	.1033	.0233	....	....	
17, 500	70, 000	.1567	.0534	....	....	
17, 570	70, 280	.1933	.0366	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	70, 280
Elastic limit per square inch of original section	do...	33, 000
Elongation per inch after rupture	inch..	0. 2667
Elongation per inch under strain at elastic limit	do...	.001100
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		″.20 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.16, ″.47*, ″.17

No. 2663.

Marks, 8 Cu R, T B T, O
Diameter, ".563.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000333	.000200	0.	....	
3,750	15,000	.000467	.000134	0.	....	
5,000	20,000	.000667	.000200	0.	....	
6,250	25,000	.000800	.000133	0.	....	
7,500	30,000	.001000	.000200	0.	....	
7,750	31,000	.001033	.000033	....	....	
8,000	32,000	.001067	.000034	....	....	
8,250	33,000	.001133	.000066	....	....	Elastic limit.
8,500	34,000	.002333	.001200	....	....	
8,750	35,000	.003367	.001034	....	....	
9,000	36,000	.003733	.000366	....	....	
9,250	37,000	.004267	.000534	....	....	
9,500	38,000	.005167	.000900	....	....	
9,750	39,000	.005833	.000766	....	....	
10,000	40,000	.007000	.001067	....	....	
10,250	41,000	.008000	.001000	....	....	
10,500	42,000	.009000	.001000	....	....	
10,750	43,000	.010000	.001000	....	....	
11,000	44,000	.011000	.001000	....	....	
11,250	45,000	.012167	.001167	....	....	
11,500	46,000	.013333	.001166	....	....	
11,750	47,000	.014667	.001334	....	....	
12,000	48,000	.015833	.001166	....	....	
12,250	49,000	.016833	.001000	....	....	
12,500	50,000	.018333	.001500	....	....	
13,000	52,000	.021667	.003334	....	....	
13,500	54,000	.025000	.003333	....	....	
14,000	56,000	.028333	.003333	....	....	
14,500	58,000	.032333	.004000	....	....	
15,000	60,000	.037000	.004667	....	....	
15,500	62,000	.042500	.005500	....	....	
16,000	64,000	.0533	.0118	....	....	
16,500	66,000	.0600	.0067	....	....	
17,000	68,000	.0667	.0067	....	....	
17,500	70,000	.0867	.0200	....	....	
18,000	72,000	.1100	.0233	....	....	
18,490	73,960	.1700	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..............................pounds.. 73,960
Elastic limit per square inch of original section..............................do... 33,000
Elongation per inch after rupture..............................inch.. 0.2000
Elongation per inch under strain at elastic limit..............................do... .001133
Reduction in diameter at point of rupture..............................do... .094
Reduction in area after rupture, per centum of original section.............................. 30.6
Position of rupture..............................".68 from neck
Character of broken surface..............................silky, flaky; opened small cracks in surface of stem
Elongation of inch sections..............................".29*, ".17, ".14

No. 2664.

Marks, $^{8}\,\overset{\text{Cn}}{\text{B}}\,\overset{\text{R}_7}{\text{T}_9}\,\overset{\text{T}}{\text{M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000333	.000200	0.	....	
3,750	15,000	.000533	.000200	0.	....	
5,000	20,000	.000667	.000134	0.	....	
6,250	25,000	.000800	.000133	0.	....	
7,500	30,000	.001000	.000200	0.	....	
7,750	31,000	.001067	.000067	....	....	
8,000	32,000	.001167	.000100	....	....	Elastic limit.
8,250	33,000	.003667	.002500	....	....	
8,500	34,000	.004667	.001000	....	....	
8,750	35,000	.005300	.000633	.004000	.004000	
9,000	36,000	.005700	.000400	....	....	
9,250	37,000	.006333	.000633	....	....	
9,500	38,000	.007333	.001000	....	....	
9,750	39,000	.008667	.001334	....	....	
10,000	40,000	.010000	.001333	....	....	
10,250	41,000	.010833	.000833	....	....	
10,500	42,000	.011667	.000834	....	....	
10,750	43,000	.012667	.001000	....	....	
11,000	44,000	.014167	.001500	....	....	
11,250	45,000	.015500	.001333	....	....	
11,500	46,000	.016833	.001333	....	....	
11,750	47,000	.018000	.001167	....	....	
12,000	48,000	.019833	.001833	....	....	
12,500	50,000	.022667	.002844	....	....	
13,000	52,000	.026333	.003666	....	....	
13,500	54,000	.030000	.003667	....	....	
14,000	56,000	.034667	.004667	....	....	
14,500	58,000	.039000	.004333	....	....	
15,000	60,000	.0467	.0077	....	....	
15,500	62,000	.0567	.0100	....	....	
16,000	64,000	.0667	.0100	....	....	
16,500	66,000	.0733	.0066	....	....	
17,000	68,000	.0933	.0200	....	....	
17,500	70,000	.1233	.0300	....	....	
17,880	71,520	.1900	.0667	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	71,520
Elastic limit per square inch of original section..........do...	32,000
Elongation per inch after rupture..........inch..	0.2600
Elongation per inch under strain at elastic limit..........do...	.001167
Reduction in diameter at point of rupture..........do...	.114
Reduction in area after rupture, per centum of original section..........	36.4
Position of rupture..........	½ inch from middle of stem
Character of broken surface..........	silky; opened cracks in surface of stem
Elongation of inch sections..........	″.21* ″.40*, ″.17

No. 2665.

Marks, $^{8\ Cn\ R_7\ T}_{M\ T_7\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000267	.000100	0.	....	
3,750	15,000	.000400	.000133	0.	....	
5,000	20,000	.000600	.000200	0.	....	
6,250	25,000	.000733	.000133	0.	......	
7,500	30,000	.000933	.000200	—.000067	—.000067	
7,750	31,000	.000967	.000034	....	....	
8,000	32,000	.000967	0.	....	....	
8,250	33,000	.001000	.000033	....	....	
8,500	34,000	.001033	.000033	....	....	
8,750	35,000	.001100	.000067	—.000067	0.	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001200	.000067	....	....	
9,500	38,000	.001267	.000067	....	....	
9,750	39,000	.001333	.000066	....	....	Elastic limit.
10,000	40,000	.002533	.001200	....	....	
10,250	41,000	.002933	.000400	....	....	
10,500	42,000	.004100	.001167	....	....	
10,750	43,000	.005100	.001000	....	....	
11,000	44,000	.006500	.001400	....	....	
11,250	45,000	.007500	.001000	....	....	
11,500	46,000	.008500	.001000	....	....	
11,750	47,000	.009667	.001167	....	....	
12,000	48,000	.010883	.001166	....	....	
12,250	49,000	.012000	.001167	....	....	
12,500	50,000	.013000	.001000	....	....	
13,000	52,000	.015667	.002667	....	....	
13,500	54,000	.018333	.002666	....	....	
14,000	56,000	.020667	.002334	....	....	
14,500	58,000	.024333	.003666	....	....	
15,000	60,000	.027667	.003334	....	....	
15,500	62,000	.031333	.003666	....	....	
16,000	64,000	.035667	.004334	....	....	
16,500	66,000	.040333	.004666	....	....	
17,000	68,000	.0467	.006367	....	....	
17,500	70,000	.0600	.0133	....	....	
18,000	72,000	.0667	.0067	....	....	
18,500	74,000	.0833	.0166	....	....	
19,000	76,000	.1000	.0167	....	....	
19,420	77,680	.1667	.0667	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 77,680
Elastic limit per square inch of original section ....do... 39,000
Ellongation per inch after rupture ....inch.. 0.2267
Elongation per inch under strain at elastic limit ....do... .001333
Reduction in diameter at point of rupture ....do... .144
Reduction in area after rupture, per centum of original section 44.6
Position of rupture....................1″.20 from neck
Character of broken surface....................silky
Elongation of inch sections....................″.13, ″.22, ″.33*

No. 2666.

Marks, $^{8\,\mathrm{Cn}\,\mathrm{R},\,\mathrm{T}}_{\mathrm{M}\,\mathrm{T},\,\mathrm{O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000300	.000133	0.	....	
3, 750	15, 000	.000500	.000200	0.	....	
5, 000	20, 000	.000600	.000100	0.	....	
6, 250	25, 000	.000800	.000200	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001167	.000200	0.	....	
9, 000	36, 000	.001233	.000066	....	....	
9, 250	37, 000	.001267	.000034	....	....	Elastic limit.
9, 500	38, 000	.001433	.000166	....	....	
9, 750	39, 000	.001533	.000100	....	....	
10, 000	40, 000	.001767	.000234	.000567	.000567	
10, 250	41, 000	.002933	.001266	....	....	
10, 500	42, 000	.003333	.000400	....	....	
10, 750	43, 000	.004167	.000834	....	....	
11, 000	44, 000	.005333	.001166	....	....	
11, 250	45, 000	.006333	.001000	....	....	
11, 500	46, 000	.007667	.001334	....	....	
11, 750	47, 000	.008667	.001000	....	....	
12, 000	48, 000	.009333	.000666	....	....	
12, 250	49, 000	.010333	.001000	....	....	
12, 500	50, 000	.011667	.001334	....	....	
13, 000	52, 000	.014000	.002333	....	....	
13, 500	54, 000	.016333	.002333	....	....	
14, 000	56, 000	.019000	.002667	....	....	
14, 500	58, 000	.022000	.003000	....	....	
15, 000	60, 000	.025000	.003000	....	....	
15, 500	62, 000	.028333	.003333	....	....	
16, 000	64, 000	.032333	.004000	....	....	
16, 500	66, 000	.036500	.004167	....	....	
17, 000	68, 000	.0433	.0068	....	....	
17, 500	70, 000	.0500	.0067	....	....	
18, 000	72, 000	.0600	.0100	....	....	
18, 500	74, 000	.0667	.0067	....	....	
19, 000	76, 000	.0833	.0166	....	....	
19, 500	78, 000	.1133	.0300	....	....	
19, 550	78, 200	.1333	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section........pounds..	78, 200
Elastic limit per square inch of original section........do...	37, 000
Elongation per inch after rupture........inch..	0. 2067
Elongation per inch under strain at elastic limit........do...	.001267
Reduction in diameter at point of rupture........do...	.144
Reduction in area after rupture, per centum of original section........	44. 6
Position of rupture........	″.35 from middle of stem
Character of broken surface........	silky
Elongation of inch sections........	″.11, ″.36*, ″.15

No. 2667.

Marks, $^{8\ \mathrm{Cn\ R,\ T}}_{\mathrm{M\ T,\ M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

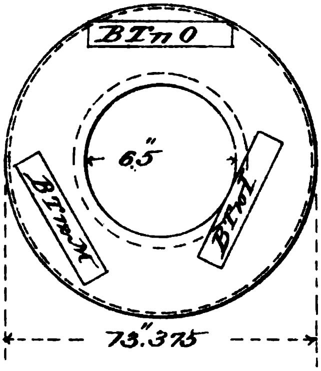
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000433	.000100	0.	....	
5,000	20,000	.000667	.000234	0.	....	
6,250	25,000	.000733	.000066	0.	....	
7,500	30,000	.001000	.000267	0.	....	
8,750	35,000	.001133	.000133	0.	....	
9,000	36,000	.001200	.000067	....	....	
9,250	37,000	.001267	.000067	....	....	
9,500	38,000	.001333	.000066	....	....	Elastic limit.
9,750	39,000	.001700	.000367	....	....	
10,000	40,000	.002667	.000967	....	....	
10,250	41,000	.003367	.000700	....	....	
10,500	42,000	.004667	.001300	....	....	
10,750	43,000	.005667	.001000	....	....	
11,000	44,000	.006833	.001166	....	....	
11,250	45,000	.008000	.001167	....	....	
11,500	46,000	.008833	.000833	....	....	
11,750	47,000	.009833	.001000	....	....	
12,000	48,000	.011433	.001600	....	....	
12,250	49,000	.012333	.000900	....	....	
12,500	50,000	.013467	.001134	....	....	
13,000	52,000	.015733	.002266	....	....	
13,500	51,000	.018333	.002600	....	....	
14,000	56,000	.021000	.002667	....	....	
14,500	58,000	.024333	.003333	....	....	
15,000	60,000	.027733	.003400	....	....	
15,500	62,000	.031500	.003767	....	....	
16,000	64,000	.035667	.004167	....	....	
16,500	66,000	.040167	.004500	....	....	
17,000	68,000	.0533	.003133	....	....	
17,500	70,000	.0600	.0067	....	....	
18,000	72,000	.0667	.0067	....	....	
18,500	74,000	.0833	.0166	....	....	
19,000	76,000	.1000	.0167	....	....	
19,380	77,520	.1400	.0400	....	....	Tensile strength.

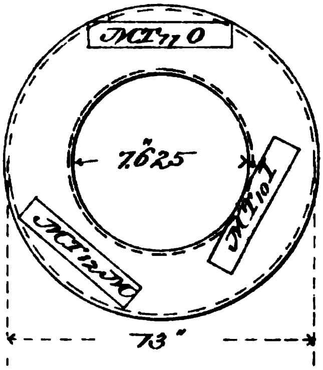
General summary.

Tensile strength per square inch of original section	pounds..	77,520
Elastic limit per square inch of original section	do...	38,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do...	.001333
Reduction in diameter at point of rupture	do...	.134
Reduction in area after rupture, per centum of original section		41.9
Position of rupture		″.37 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.11, .31″, ″.18

New Tube No. 7 8" converted Rifle

Additional specimens





No. 2779.

Marks, $^{8\,\mathrm{Cn}\,\mathrm{R}_7\,\mathrm{T}}_{\mathrm{B}\,\mathrm{T}_{10}\,\mathrm{I}}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000200	.000200	0.	....	
2, 500	10, 000	.000433	.000233	0.	....	
3, 750	15, 000	.000633	.000200	0.	....	
5, 000	20, 000	.000767	.000134	0.	....	
6, 250	25, 000	.000933	.000166	0.	....	
7, 500	30, 000	.001100	.000167	0.	....	
8, 750	35, 000	.001267	.000167	0.	....	
9, 000	36, 000	.001300	.000033	....	....	
9, 250	37, 000	.001300	0.	....	....	
9, 500	38, 000	.001333	.000033	....	....	
9, 750	30, 000	.001367	.000034	....	....	
10, 000	40, 000	.001433	.000066	....	....	Elastic limit.
10, 250	41, 000	.001533	.000100	....	....	
10, 500	42, 000	.001767	.000234	....	....	
10, 750	43, 000	.002200	.000433	....	....	
11, 000	44, 000	.002700	.000500	....	....	
11, 250	45, 000	.003100	.000400	....	....	
11, 500	46, 000	.003800	.000700	....	....	
11, 750	47, 000	.004533	.000733	....	....	
12, 000	48, 000	.005400	.000867	....	....	
12, 250	49, 000	.006100	.000700	....	....	
12, 500	50, 000	.007300	.001200	....	....	
13, 000	52, 000	.009500	.002200	....	....	
13, 500	54, 000	.012000	.002500	....	....	
14, 000	56, 000	.014500	.002500	....	....	
14, 500	58, 000	.016800	.002300	....	....	
15, 000	60, 000	.019567	.002767	....	....	
15, 500	62, 000	.022667	.003100	....	....	
16, 000	64, 000	.026000	.003333	....	....	
16, 500	66, 000	.029700	.003700	....	....	
17, 000	68, 000	.034500	.004800	....	....	
17, 500	70, 000	.038667	.004167	....	....	
18, 000	72, 000	.044367	.005700	....	....	
18, 500	74, 000	.050833	.006466	....	....	
19, 000	76, 000	.0567	.005867	....	....	
19, 500	78, 000	.0700	.0133	....	....	
20, 000	80, 000	.0900	.0200	....	....	
20, 200	80, 800	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section........pounds..	80, 800
Elastic limit per square inch of original section........do...	40, 000
Elongation per inch after rupture........inch..	0. 1800
Elongation per inch under strain at elastic limit........do...	.001433
Reduction in diameter at point of rupture........do...	.125
Reduction in area after rupture, per centum of original section........	39. 2
Position of rupture........	1″ 10 from neck
Character of broken surface........	silky, flaky; opened fine cracks in surface of stem
Elongation of inch sections........	″.10. ″.16. ″.28*

No. 2780.

Marks, $^{8\ \mathrm{Cn}\ \mathrm{R}_7\ \mathrm{T}}_{\mathrm{B}\ \mathrm{T}_{11}\ \mathrm{O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	**Initial load.**
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001167	.000200	0.	....	
10, 000	40, 000	.001333	.000166	....	....	
10, 250	41, 000	.001400	.000067	....	....	
10, 500	42, 000	.001433	.000033	....	....	
10, 750	43, 000	.001500	.000067	....	....	**Elastic limit.**
11, 000	44, 000	.001733	.000233	....	....	
11, 250	45, 000	.002100	.000367	....	....	
11, 500	46, 000	.002700	.000600	....	....	
11, 750	47, 000	.003167	.000467	....	....	
12, 000	48, 000	.003800	.000633	....	....	
12, 250	49, 000	.004467	.000667	....	....	
12, 500	50, 000	.005433	.000966	....	....	
13, 000	52, 000	.007233	.001800	....	....	
13, 500	54, 000	.009433	.002200	....	....	
14, 000	56, 000	.011400	.001967	....	....	
14, 500	58, 000	.013733	.002333	....	....	
15, 000	60, 000	.016100	.002367	....	....	
15, 500	62, 000	.018667	.002567	....	....	
16, 000	64, 000	.021433	.002766	....	....	
16, 500	66, 000	.024667	.003234	....	....	
17, 000	68, 000	.027700	.003033	....	....	
17, 500	70, 000	.031667	.003967	....	....	
18, 000	72, 000	.035500	.003833	....	....	
18, 500	74, 000	.040000	.004500	....	....	
19, 000	76, 000	.045833	.005833	....	....	
19, 500	78, 000	.052333	.006500	....	....	
20, 000	80, 000	0600	.007667	....	....	
20, 500	82, 000	.0733	.0133	....	....	
21, 000	84, 000	.0933	.0200	....	....	
21, 210	84, 840	.1333	.0400	....	....	**Tensile strength.**

General summary.

Tensile strength per square inch of original section	pounds..	34, 840
Elastic limit per square inch of original section	do...	43, 000
Elongation per inch after rupture	inch..	0. 1867
Elongation per inch under strain at elastic limit	do...	.001500
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44. 6
Position of rupture		″.65 from neck
Character of broken surface		silky
Elongation of inch sections		″.09, ″.12, ″.35*

No. 2781.

Marks, $\genfrac{}{}{0pt}{}{8\ \mathrm{Cn}\ \mathrm{R}\ \mathrm{T}}{\mathrm{B}\ \mathrm{T}_{12}\ \mathrm{M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000500	.000167	0.	....	
5, 000	20, 000	.000667	.000167	0.	....	
6, 250	25, 000	.000833	.000166	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
8, 750	35, 000	.001200	.000200	0.	....	
9, 000	36, 000	.001233	.000033	....	....	
9, 250	37, 000	.001300	.000067	....	....	
9, 500	38, 000	.001400	.000100	....	....	Elastic limit.
9, 750	39, 000	.001933	.000533	....	....	
10, 000	40, 000	.003233	.001300	....	....	
10, 250	41, 000	.003967	.000734	....	....	
10, 500	42, 000	.005000	.001033	....	....	
10, 750	43, 000	.005733	.000733	....	....	
11, 000	44, 000	.006783	.001000	....	....	
11, 250	45, 000	.007067	.000934	....	....	
11, 500	46, 000	.008667	.001000	....	....	
11, 750	47, 000	.009633	.000966	....	....	
12, 000	48, 000	.010867	.001234	....	....	
12, 250	49, 000	.011867	.001000	....	....	
12, 500	50, 000	.013200	.001333	....	....	
13, 000	52, 000	.015833	.002633	....	....	
13, 500	54, 000	.019000	.003167	....	....	
14, 000	56, 000	.021467	.002467	....	....	
14, 500	58, 000	.024667	.003200	....	....	
15, 000	60, 000	.028200	.003533	....	....	
15, 500	62, 000	.032333	.004133	....	....	
16, 000	64, 000	.036833	.004500	....	....	
16, 500	66, 000	.042167	.005334	....	....	
17, 000	68, 000	.048000	.005833	....	....	
17, 500	70, 000	.055333	.007333	....	....	
18, 000	72, 000	.0633	.007967	....	....	
18, 500	74, 000	.0767	.0134	....	....	
19, 000	76, 000	.1067	.0300	....	....	
19, 140	76, 560	.1367	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................................pounds.. 76, 560
Elastic limit per square inch of original section...do... 38, 000
Elongation per inch after rupture...inch.. 0. 2033
Elongation per inch under strain at elastic limit ....do... .001400
Reduction in diameter at point of rupture ....do... .144
Reduction in area after rupture, per centum of original section 44. 6
Position of rupture ....1″.20 from neck
Character of broken surface..silky; opened cracks in surface of stem
Elongation of inch sections...″.09, ″.25, ″.27*

No. 2782.

Marks, ${}^{8\,\mathrm{Cn}\,\mathrm{R}_7\,\mathrm{T}}_{\mathrm{M}\,\mathrm{T}_{10}\,\mathrm{I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	....	....	
2, 500	10, 000	.000300	.000167	....	....	
3, 750	15, 000	.000467	.000167	....	....	
5, 000	20, 000	.000633	.000166	....	....	
6, 250	25, 000	.000800	.000167	....	....	
7, 500	30, 000	.000967	.000167	....	....	
8, 750	35, 000	.001133	.000166	....	....	
10, 000	40. 000	.001300	.000167	....	....	
10, 250	41, 000	.001333	.000033	....	....	
10, 500	42, 000	.001367	.000034	....	....	
10, 750	43, 000	.001367	0.	....	....	
11, 000	44, 000	.001400	.000033	....	....	
11, 250	45, 000	.001433	.000033	....	....	
11, 500	46, 000	.001533	.000100	....	....	Elastic limit.
11, 750	47, 000	.002233	.000700	....	....	
12, 000	48, 000	.004033	.001800	....	....	
12, 250	49, 000	.005000	.000967	....	....	
12, 500	50, 000	.006400	.001400	....	....	
13, 000	52, 000	.008933	.002533	....	....	
13, 500	54, 000	.011500	.002567	....	....	
14, 000	56, 000	.014000	.002500	....	....	
14, 500	58, 000	.016167	.002167	....	....	
15, 000	60, 000	.018833	.002666	....	....	
15, 500	62, 000	.021333	.002500	....	....	
16, 000	64, 000	.024167	.002834	....	....	
16, 500	66, 000	.027667	.003500	....	....	
17, 000	68, 000	.031000	.003333	....	....	
17, 500	70, 000	.035500	.004500	....	....	
18, 000	72, 000	.040333	.004833	....	....	
18, 500	74, 000	.045667	.005334	....	....	
19, 000	76, 000	.054000	.008333	....	....	
19, 500	78, 000	.060333	.006333	....	....	
20, 000	80, 000	.0700	.009667	....	....	
20, 500	82, 000	.1000	.0300	....	....	
20, 700	82, 800	.1300	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	82, 800
Elastic limit per square inch of original section	do	46, 000
Elongation per inch after rupture	inch	0. 2033
Elongation per inch under strain at elastic limit	do	.001533
Reduction in diameter at point of rupture	do	.164
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		1″.25 from neck
Character of broken surface		silky
Elongation of inch sections		″.22*, ″.28*, ″.11

No. 2783.

Marks, $^{8\ \mathrm{Cn}\ \mathrm{R}_7\ \mathrm{T}}_{\mathrm{M}\ \mathrm{T}_{11}\ \mathrm{O}}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	. 000167	. 000167	0.		
2, 500	10, 000	. 000333	. 000166	0.		
3, 750	15, 000	. 000500	. 000167	0.		
5, 000	20, 000	. 000667	. 000167	0.		
6, 250	25, 000	. 000833	. 000166	0.		
7, 500	30, 000	. 001033	. 000200	0.		
8, 750	35, 000	. 001200	. 000167	0.		
9, 000	36, 000	. 001233	. 000033			
9, 250	37, 000	. 001300	. 000067			
9, 500	38, 000	. 001333	. 000033			
9, 750	39, 000	. 001367	. 000034			
10, 000	40, 000	. 001400	. 000033			
10, 250	41, 000	. 001467	. 000067			Elastic limit.
10, 500	42, 000	. 002533	. 001066			
10, 750	43, 000	. 003900	. 001367			
11, 000	44, 000	. 006000	. 002100			
11, 250	45, 000	. 007333	. 001333			
11, 500	46, 000	. 008100	. 000767			
11, 750	47, 000	. 008833	. 000733			
12, 000	48, 000	. 010333	. 001500			
12, 250	49, 000	. 011333	. 001000			
12, 500	50, 000	. 012600	. 001267			
13, 000	52, 000	. 014500	. 001900			
13, 500	54, 000	. 017167	. 002667			
14, 000	56, 000	. 020167	. 003000			
14, 500	58, 000	. 023333	. 003166			
15, 000	60, 000	. 026167	. 002834			
15, 500	62, 000	. 029667	. 003500			
16, 000	64, 000	. 033233	. 003566			
16, 500	66, 000	. 038000	. 004767			
17, 000	68, 000	. 043167	. 005167			
17, 500	70, 000	. 049667	. 006500			
18, 000	72, 000	. 056933	. 007266			
18, 500	74, 000	. 0667	. 009767			
19, 000	76, 000	. 0833	. 0166			
19, 500	78, 000	. 1100	. 0267			
19, 590	78, 360	. 1367	. 0267			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	78, 360
Elastic limit per square inch of original section	do...	41, 000
Elongation per inch after rupture	inch..	0. 1967
Elongation per inch under strain at elastic limit	do ..	. 001467
Reduction in diameter at point of rupture	do...	. 144
Reduction in area after rupture, per centum of original section		41. 6
Position of rupture		".45 from neck
Character of broken surface		silky
Elongation of inch sections		".10, ".13, ".36*

No. 2784.

Marks, $\genfrac{}{}{0pt}{}{8\,C,\,R,\,T}{M\,T\,{}_{12}\,M}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000500	.000200	0.	....	
5, 000	20, 000	.000667	.000167	0.	....	
6, 250	25, 000	.000833	.000166	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
8, 750	35, 000	.001167	.000167	0.	....	
9, 000	36, 000	.001200	.000033	....	....	
9, 250	37, 000	.001233	.000033	....	....	
9, 500	38, 000	.001267	.000034	....	....	Elastic limit.
9, 750	39, 000	.001400	.000133	....	....	
10, 000	40, 000	.001633	.000233	....	....	
10, 250	41, 000	.001967	.000334	....	....	
10, 500	42, 000	.002400	.000433	....	....	
10, 750	43, 000	.002700	.000300	....	....	
11, 000	44, 000	.003000	.000300	....	....	
11, 250	45, 000	.004000	.001000	....	....	
11, 500	46, 000	.006333	.002333	....	....	
11, 750	47, 000	.007667	.001334	....	....	
12, 000	48, 000	.008333	.000666	....	....	
12, 250	49, 000	.009167	.000834	....	....	
12, 500	50, 000	.010333	.001166	....	....	
13, 000	52, 000	.012833	.002500	....	....	
13, 500	54, 000	.015833	.003000	....	....	
14, 000	56, 000	.018000	.002167	....	....	
14, 500	58, 000	.020667	.002667	....	....	
15, 000	60, 000	.023267	.002600	....	....	
15, 500	62, 000	.026333	.003066	....	....	
16, 000	64, 000	.029667	.003334	....	....	
16, 500	66, 000	.033000	.003333	....	....	
17, 000	68, 000	.037333	.004333	....	....	
17, 500	70, 000	.043167	.005834	....	....	
18, 000	72, 000	.048333	.005166	....	....	
18, 500	74, 000	.054667	.006334	....	....	
19, 000	76, 000	.0667	.012033	....	....	
19, 500	78, 000	.0767	.0100	....	....	
20, 000	80, 000	.1067	.0300	....	....	
20, 060	80, 240	.1300	.0233	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section........pounds..	80, 240
Elastic limit per square inch of original section........do...	38, 000
Elongation per inch after rupture........inch..	0. 1900
Elongation per inch under strain at elastic limit........do...	.001267
Reduction in diameter at point of rupture........do...	.174
Reduction in area after rupture, per centum of original section........	52. 2
Position of rupture........	″.70 from neck
Character of broken surface........	silky
Elongation of inch sections........	″.37*, ″.11, ″.09

NEW TUBE No. 8.

No. 2146.

Marks, $\frac{8\,T_8}{BT_7\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001167	.000200	.000033	.000033	Elastic limit.
9, 000	36, 000	.001367	.000200	....	....	
9, 250	37, 000	.008367	.007600	....	....	
9, 500	38, 000	.009500	.001133	....	....	
9, 750	39, 000	.010433	.000933	....	....	
10, 000	40, 000	.012033	.001600	....	....	
10. 250	41, 000	.012700	.000667	....	....	
10, 500	42, 000	.014000	.001300	....	....	
10, 750	43, 000	.015400	.001400	....	....	
11, 000	44, 000	.016700	.001300	....	....	
11, 250	45, 000	.017867	.001167	....	....	
11, 500	46, 000	.019533	.001666	....	....	
11, 750	47, 000	.020667	.001134	....	....	
12, 000	48, 000	.022500	.001833	....	....	
12, 250	49, 000	.024000	.001500	....	....	
12, 500	40, 000	.025833	.001833	....	....	
13, 000	52, 000	.030000	.004167	....	....	
13, 500	54, 000	.034333	.004333	....	....	
14, 000	56, 000	.039167	.004834	....	....	
14, 500	58, 000	.044833	.005666	....	....	
15, 000	60, 000	.051333	.006500	....	....	
15, 500	62, 000	.058267	.006934	....	....	
16, 000	64, 000	.069000	.010733	....	....	
16, 500	66, 000	.0867	.0177	....	....	
17, 000	68, 000	.1033	.0166	....	....	
17, 500	70, 000	.1467	.0434	....	....	
17, 550	70, 200	.1900	.0433	....	....	Tensile strength.

General summary.

Specific gravity		7.8591
Hardness		11.23
Tensile strength per square inch of original section	pounds..	70, 200
Elastic limit per square inch of original section	do...	35, 000
Elongation per inch after rupture	inch..	0.2600
Elongation per inch under strain at elastic limit	do...	.001167
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44.6
Position of rupture		1″.20 from neck
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		″.33*, ″.30, ″.15

No. 2147.

Marks, $\frac{8T_8}{BT_8O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	.000033	.000033	
2,500	10,000	.000367	.000200	.000033	0.	
3,750	15,000	.000567	.000200	.000033	0.	
5,000	20,000	.000733	.000166	.000067	.000034	
6,250	25,000	.000900	.000167	.000100	.000033	
7,500	30,000	.001033	.000133	.000100	0.	
8,750	35,000	.001233	.000200	.000100	0.	
9,000	36,000	.001333	.000100	....	....	
9,250	37,000	.001400	.000067	....	....	Elastic limit.
9,500	38,000	.005000	.003600	....	....	
9,750	39,000	.007833	.002833	....	....	
10,000	40,000	.009333	.001500	....	....	
10,250	41,000	.010400	.001067	....	....	
10,500	42,000	.011500	.001100	....	....	
10,750	43,000	.012600	.001100	....	....	
11,000	44,000	.013733	.001133	....	....	
11,250	45,000	.014900	.001167	....	....	
11,500	46,000	.016033	.001133	....	....	
11,750	47,000	.017233	.001200	....	....	
12,000	48,000	.018667	.001434	....	....	
12,250	49,000	.020000	.001333	....	....	
12,500	50,000	.021667	.001667	....	....	
13,000	52,000	.025000	.003333	....	....	
13,500	54,000	.028333	.003333	....	....	
14,000	56,000	.032167	.003834	....	....	
14,500	58,000	.036333	.004166	....	....	
15,000	60,000	.041167	.004834	....	....	
15,500	62,000	.046667	.005500	....	....	
16,000	64,000	.052833	.006166	....	....	
16,500	66,000	.061333	.008500	....	....	
17,000	68,000	.070333	.009000	....	....	
17,500	70,000	.0867	.016367	....	....	
18,000	72,000	.1067	.0200	....	....	
18,380	73,520	.1733	.0666	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	73,520
Elastic limit per square inch of original section	do...	37,000
Elongation per inch after rupture	inch..	0.2500
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.154
Reduction in area after rupture, per centum of original section		47.2
Position of rupture		¼ inch from middle of stem
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		″.20, ″.41*, ″.14

No. 2148.

Marks, $^{8\,T_s}_{B\,T_9\,M}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
7,750	31,000	.001000	.000033	....	....	
8,000	32,000	.001000	0.	....	....	
8,250	33,000	.001033	.000033	....	....	
8,500	34,000	.001067	.000034	....	....	
8,750	35,000	.001100	.000033	0.	....	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001200	.000067	....	....	
9,500	38,000	.001233	.000033	....	....	
9,750	39,000	.001267	.000034	....	....	
10,000	40,000	.001367	.000100	.000067	.000067	
10,250	41,000	.001433	.000066	....	....	Elastic limit.
10,500	42,000	.002033	.000600	....	....	
10,750	43,000	.006333	.004300	....	....	
11,000	44,000	.007700	.001367	....	....	
11,250	45,000	.008433	.000733	....	....	
11,500	46,000	.009767	.001334	....	....	
11,750	47,000	.010767	.001000	....	....	
12,000	48,000	.012000	.001233	....	....	
12,250	49,000	.013067	.00 067	....	....	
12,500	50,000	.014467	.001400	....	....	
13,000	52,000	.017333	.002866	....	....	
13,500	54,000	.019667	.002334	....	....	
14,000	56,000	.022667	.003000	....	....	
14,500	58,000	.026333	.003666	....	....	
15,000	60,000	.030167	.003834	....	....	
15,500	62,000	.034167	.004000	....	....	
16,000	64,000	.038333	.004166	....	....	
16,500	66,000	.044333	.006000	....	....	
17,000	68,000	.051000	.006667	....	....	
17,500	70,000	.063000	.012000	....	....	
18,000	72,000	.0733	.0103	....	....	
18,500	74,000	.0933	.0200	....	....	
19,000	76,000	.1367	.0434	....	....	
19,020	76,080	.1600	.0233	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76,080
Elastic limit per square inch of original section	do...	41,000
Elongation per inch after rupture	inch..	0.2300
Elongation per inch under strain at elastic limit	do...	.001433
Reduction in diameter at point of rupture	do...	.104
Reduction in area after rupture, per centum of original section		33.5
Position of rupture		".20 from middle of stem
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		".20, ".35*, ".1

No. 2149.

Marks, $\overset{8\,T\,8}{M\,T_4\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	Elastic limit.
9, 000	36, 000	.001267	.000134	....	....	
9, 250	37, 000	.001367	.000100	....	....	
9, 500	38, 000	.007733	.000366	....	....	
9, 750	39, 000	.008467	.000734	....	....	
10, 000	40, 000	.009333	.000866	....	....	
10, 250	41, 000	.010333	.001000	....	....	
10, 500	42, 000	.011500	.001167	....	....	
10, 750	43, 000	.012000	.000500	....	....	
11, 000	44, 000	.013733	.001733	....	....	
11, 250	45, 000	.014500	.000767	....	....	
11, 500	46, 000	.015800	.001300	....	....	
11, 750	47, 000	.016833	.001033	....	....	
12, 000	48, 000	.018067	.001234	....	....	
12, 250	49, 000	.019133	.001066	....	....	
12, 500	50, 000	.020800	.001667	....	....	
13, 000	52, 000	.023333	.002533	....	....	
13, 500	54, 000	.026667	.003334	....	....	
14, 000	56, 000	.030000	.003334	....	....	
14, 500	58, 000	.033733	.003733	....	....	
15, 000	60, 000	.038000	.004267	....	....	
15, 500	62, 000	.043333	.005333	....	....	
16, 000	64, 000	.048333	.005000	....	....	
16, 500	66, 000	.055167	.006834	....	....	
17, 000	68, 000	.064000	.008833	....	....	
17, 500	70, 000	.0733	.0093	....	....	
18, 000	72, 000	.0933	.0200	....	....	
18, 500	74, 000	.1067	.0134	....	....	
18, 790	75, 160	.1567	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	75, 160
Elastic limit per square inch of original section	do ..	35, 000
Elongation per inch after rupture	inch..	0. 2167
Elongation per inch under strain at elastic limit	do...	.001133
Reduction in diameter at point of rupture	do...	.124
Reduction in area after rupture, per centum of original section		39. 2
Position of rupture		¼ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.17, ″.36*, ″.12

No. 2150.

Marks, $\overset{8\,\mathrm{T}_s}{\mathrm{M\,T}_s\,\mathrm{O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

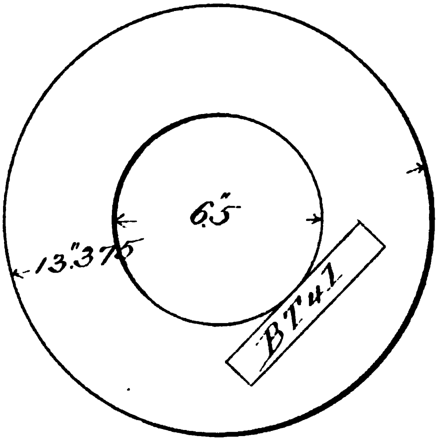
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000333	.000200	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000833	.000166	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001133	.000133	0.	....	
9,000	36,000	.001200	.000067	....	....	
9,250	37,000	.001267	.000067	....	....	Elastic limit.
9,500	38,000	.001400	.000133	....	....	
9,750	39,000	.006667	.005267	....	....	
10,000	40,000	.008733	.002066	....	....	
10,250	41,000	.009667	.000934	....	....	
10,500	42,000	.010333	.000666	....	....	
10,750	43,000	.011033	.000700	....	....	
11,000	44,000	.012000	.000967	....	....	
11,250	45,000	.013200	.001200	....	....	
11,500	46,000	.014133	.000033	....	....	
11,750	47,000	.015267	.001134	....	....	
12,000	48,000	.016500	.001233	....	....	
12,250	49,000	.017467	.000967	....	....	
12,500	50,000	.018800	.001333	....	....	
13,000	52,000	.021533	.002733	....	....	
13,500	54,000	.024333	.002800	....	....	
14,000	56,000	.027500	.003167	....	....	
14,500	58,000	.030833	.003333	....	....	
15,000	60,000	.034267	.003434	....	....	
15,500	62,000	.039167	.004900	....	....	
16,000	64,000	.043733	.004566	....	....	
16,500	66,000	.049167	.005434	....	....	
17,000	68,000	.055333	.006166	....	....	
17,500	70,000	.0633	.007967	....	....	
18,000	72,000	.0750	.0117	....	....	
18,500	74,000	.0967	.0217	....	....	
19,000	76,000	.1133	.0166	....	....	
19,410	77,640	.1800	.0667	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	77,640
Elastic limit per square inch of original section	do...	37,000
Elongation per inch after rupture	inch..	0.2333
Elongation per inch under strain at elastic limit	do...	.001267
Reduction in diameter at point of rupture	do...	.114
Reduction in area after rupture, per centum of original section		36.4
Position of rupture		″.90 from neck
Character of broken surface, granular, 60 per centum; silky, 40 per centum; opened cracks in surface of stem.		
Elongation of inch sections		″.31*, ″.20, ″.19

Tube No. 9   8" converted Rifle

Additional specimen



No. 1000.

Marks, $^{\mathrm{8\,T_9}}_{\mathrm{B\,T_4 I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	0.	....	
10,000	40,000	.001233	.000133	0.	....	
10,250	41,000	.001267	.000034	....	....	
10,500	42,000	.001333	.000066	....	....	
10,750	43,000	.001367	.000034	....	....	
11,000	44,000	.001433	.000066	....	....	Elastic limit.
11,250	45,000	.006067	.004634	.004467	.004467	
11,500	46,000	.007833	.001766	....	....	
11,750	47,000	.008400	.000567	....	....	
12,000	48,000	.009733	.001333	....	....	
12,250	49,000	.011000	.001267	....	....	
12,500	50,000	.012267	.001267	.010433	.005966	
13,000	52,000	.014500	.002233	....	....	
13,500	54,000	.016833	.002333	....	....	
14,000	56,000	.019833	.003000	....	....	
14,500	58,000	.023000	.003167	....	....	
15,000	60,000	.026000	.003000	....	....	
15,500	62,000	.029667	.003667	....	....	
16,000	64,000	.033833	.004166	....	....	
16,500	66,000	.039333	.005500	....	....	
17,000	68,000	.043667	.004334	....	....	
17,500	70,000	.050667	.007000	....	....	
18,000	72,000	.059500	.008833	....	....	
18,500	74,000	.072000	.012500	....	....	
19,000	76,000	.1033	.0313	....	....	
19,280	77,120	.1667	.0634	....	....	Tensile strength.
16,300	....	....	....	....	....	Load at time of rupture.

General summary.

Tensile strength per square inch of original section ....pounds.. 77,120
Elastic limit per square inch of original section..do... 44,000
Elongation per inch after rupture......... ....inch.. 0.2333
Elongation per inch under strain at elastic limit...do... .001433
Reduction in diameter at point of rupture...do... .154
Reduction in area after rupture, per centum of original section............................ 47.2
Position of rupture.... .... ¼ inch from neck
Character of broken surface..silky
Elongation of inch sections.. ″.44*, ″.21, ″.11

NEW TUBE No. 12.

No. 2164.

Marks, $_{B}^{8}\,{}^{T_{13}}_{T_4 I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000333	.000200	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000833	.000166	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001167	.000167	0.	....	
9,000	36,000	.001200	.000033	....	....	
9,250	37,000	.001233	.000033	....	....	
9,500	38,000	.001267	.000034	....	....	
9,750	39,000	.001300	.000033	....	....	Elastic limit.
10,000	40,000	.001500	.000200	....	....	
10,250	41,000	.002500	.001000	....	....	
10,500	42,000	.004067	.001567	....	....	
10,750	43,000	.005400	.001333	....	....	
11,000	44,000	.006600	.001200	....	....	
11,250	45,000	.007667	.001067	....	....	
11,500	46,000	.008667	.001000	....	....	
11,750	47,000	.009667	.001000	....	....	
12,000	48,000	.010667	.001000	....	....	
12,250	49,000	.012000	.001333	....	....	
12,500	50,000	.013200	.001200	....	....	
12,750	51,000	.014333	.001133	....	....	
13,000	52,000	.015667	.001334	....	....	
13,250	53,000	.017333	.001666	....	....	
13,500	54,000	.018333	.001000	....	....	
13,750	55,000	.019700	.001367	....	....	
14,000	56,000	.021400	.001700	....	....	
14,250	57,000	.023033	.001633	....	....	
14,500	58,000	.024667	.001634	....	....	
14,750	59,000	.026167	.001500	....	....	
15,000	60,000	.028333	.002166	....	....	
15,500	62,000	.032333	.004000	....	....	
16,000	64,000	.036667	.004334	....	....	
16,500	66,000	.042000	.005333	....	....	
17,000	68,000	.048667	.006667	....	....	
17.500	70,000	.056667	.008000	....	....	
18,000	72,000	.070000	.013333	....	....	
18,500	74,000	.0900	.0200	....	....	
19,000	76,000	.1100	.0200	....	....	
19,170	76,680	.1667	.0567	....	....	Tensile strength.

General summary.

Specific gravity	7.8588
Hardness	13.14
Tensile strength per square inch of original section ......pounds..	76,680
Elastic limit per square inch of original section ......do...	39,000
Elongation per inch after rupture ......inch..	0.2633
Elongation per inch under strain at elastic limit ......do...	.001300
Reduction in diameter at point of rupture ......do...	.174
Reduction in area after rupture, per centum of original section	52.2
Position of rupture	1 inch from neck
Character of broken surface	silky
Elongation of inch sections	′.40*, ″.24, ″.15

No. 2165.

Marks, $\genfrac{}{}{0pt}{}{8\ T_{12}}{B\ T_{8}\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000400	.000133	0.	....	
5,000	20,000	.000533	.000133	0.	....	
6,250	25,000	.000667	.000134	0.	....	
7,500	30,000	.000833	.000166	0.	....	
8,750	35,000	.001000	.000167	0.	....	
9,000	36,000	.001033	.000033	....	....	
9,250	37,000	.001067	.000034	....	....	
9,500	38,000	.001100	.000033	....	....	
9,750	39,000	.001133	.000033	....	....	
10,000	40,000	.001200	.000067	0.	....	
10,250	41,000	.001233	.000033	....	....	Elastic limit.
10,500	42,000	.002167	.000934	....	....	
10,750	43,000	.003000	.000833	....	....	
11,000	44,000	.004100	.001100	....	....	
11,250	45,000	.005500	.001400	....	....	
11,500	46,000	.006733	.001233	....	....	
11,750	47,000	.007933	.001200	....	....	
12,000	48,000	.009000	.001067	....	....	
12,250	49,000	.010000	.001000	....	....	
12,500	50,000	.011033	.001033	....	....	
12,750	51,000	.012167	.001134	....	....	
13,000	52,000	.013333	.001166	....	....	
13,250	53,000	.014333	.001000	....	....	
13,500	54,000	.015800	.001467	....	....	
13,750	55,000	.017167	.001367	....	....	
14,000	56,000	.018600	.001433	....	....	
14,250	57,000	.019667	.001067	....	....	
14,500	58,000	.021233	.001566	....	....	
14,750	59,000	.022767	.001534	....	....	
15,000	60,000	.024567	.001800	....	....	
15,500	62,000	.027667	.003100	....	....	
16,000	64,000	.031533	.003866	....	....	
16,500	66,000	.036000	.004467	....	....	
17,000	68,000	.042667	.006667	....	....	
17,500	70,000	.047500	.004833	....	....	
18,000	72,000	.054167	.006667	....	....	
18,500	74,000	.063667	.009500	....	....	
19,000	76,000	.078333	.014666	....	....	
19,500	78,000	.1100	.031667	....	....	
19,580	78,320	.1400	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	78,320
Elastic limit per square inch of original section	do	41,000
Elongation per inch after rupture	inch	0.2100
Elongation per inch under strain at elastic limit	do	.001233
Reduction in diameter at point of rupture	do	.154
Reduction in area after rupture, per centum of original section		47.2
Position of rupture		1 inch from neck
Character of broken surface		silky
Elongation of inch sections		″.36*, ″.18, ″.09

No. 2166.

Marks, $\overset{8\ T_{\frac{1}{2}}}{B\ T.\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000333	.000200	0.	....	
3,750	15,000	.000467	.000134	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.001000	.000200	.000033	000033	
8,750	35,000	.001167	.000167	.000033	0.	
9,000	36,000	.001200	.000033	....	....	
9,250	37,000	.001233	.000033	....	....	
9,500	38,000	.001300	.000067	....	....	
9,750	39,000	.001367	.000067	....	....	
10,000	40,000	.001400	.000033	.000067	.000034	Elastic limit.
10,250	41,000	.003833	.002433	....	....	
10,500	42,000	.006000	.002167	....	....	
10,750	43,000	.006900	.000900	....	....	
11,000	44,000	.008200	.001300	....	....	
11,250	45,000	.009333	.001133	....	....	
11,500	46,000	.010033	.000700	....	....	
11,750	47,000	.011000	.000967	....	....	
12,000	48,000	.012333	.001333	....	....	
12,250	49,000	.013500	.001167	....	....	
12,500	50,000	.014733	.001233	....	....	
12,750	51,000	.015933	.001200	....	....	
13,000	52,000	.017700	.001767	....	....	
13,250	53,000	.019000	.001300	....	....	
13,500	54,000	.020677	.001667	....	....	
13,750	55,000	.022000	.001333	....	....	
14,000	56,000	.023677	.001667	....	....	
14,250	57,000	.025333	.001666	....	....	
14,500	58,000	.027067	.001734	....	....	
14,750	59,000	.029000	.001933	....	....	
15,000	60,000	.031000	.002000	....	....	
15,500	62,000	.035500	.004500	....	....	
16,000	64,000	.040400	.004900	....	....	
16,500	66,000	.046667	.006267	....	....	
17,000	68,000	.054333	.007666	....	....	
17,500	70,000	.063333	.009000	....	....	
18,000	72,000	.077333	.014000	....	....	
18,500	74,000	.1000	.022667	....	....	
18,750	75,000	.1667	.0667	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	75,000
Elastic limit per square inch of original section	do	40,000
Elongation per inch after rupture	inch	0.2933
Elongation per inch under strain at elastic limit	do	.001400
Reduction in diameter at point of rupture	do	.154
Reduction in area after rupture, per centum of original section		47.2
Position of rupture		½ inch from middle of stem
Character of broken surface		silky
Elongations of inch sections		″.26, ″.37*, ″.15

No. 2167.

Marks, $\overset{8\ T_{12}}{M\ T_{3}\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
10,000	40,000	.001300	.000167	0.	....	
10,250	41,000	.001333	.000033	....	....	
10,500	42,000	.001367	.000034	....	....	
10,750	43,000	.001400	.000033	....	....	Elastic limit.
11,000	44,000	.001567	.000167	....	....	
11,250	45,000	.003167	.001600	....	....	
11,500	46,000	.006467	.003300	....	....	
11,750	47,000	.007600	.001133	....	....	
12,000	48,000	.008833	.001233	....	....	
12,250	49,000	.010133	.001300	....	....	
12,500	50,000	.011300	.001167	....	....	
12,750	51,000	.012233	.000933	....	....	
13,000	52,000	.013400	.001167	....	....	
13,250	53,000	.014367	.000967	....	....	
13,500	54,000	.015800	.001433	....	....	
13,750	55,000	.016933	.001133	....	....	
14,000	56,000	.018333	.001400	....	....	
14,250	57,000	.019633	.001300	....	....	
14,500	58,000	.020967	.001334	....	....	
14,750	59,000	.022300	.001333	....	....	
15,000	60,000	.024033	.001733	....	....	
15,500	62,000	.027500	.003467	....	....	
16,000	64,000	.031333	.003833	....	....	
16,500	66,000	.035333	.004000	....	....	
17,000	68,000	.040667	.005334	....	....	
17,500	70,000	.048000	.007333	....	....	
18,000	72,000	.054500	.006500	....	....	
18,500	74,000	.065000	.010500	....	....	
19,000	76,000	.0767	.0117	....	....	
19,500	78,000	.1067	.0300	....	....	
19,760	79,040	.1700	.0633	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................pounds.. 79,040
Elastic limit per square inch of original section....................do... 43,000
Elongation per inch after rupture....................inch.. 0.2400
Elongation per inch under strain at elastic limit....................do... .001400
Reduction in diameter at point of rupture....................do... .144
Reduction in area after rupture, per centum of original section.................... 44.6
Position of rupture....................″.05 from middle of stem
Character of broken surface....................silky
Elongation of inch sections....................″.20, ″.39*, ″.13

No. 2166.

Marks, $\overset{8\ \mathrm{T}_{12}}{\mathrm{B\ T.\ M}}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000333	.000200	0.	....	
3,750	15,000	.000467	.000134	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.001000	.000200	.000033	000033	
8,750	35,000	.001167	.000167	.000033	0.	
9,000	36,000	.001200	.000033	....	....	
9,250	37,000	.001233	.000033	....	....	
9,500	38,000	.001300	.000067	....	....	
9,750	39,000	.001367	.000067	....	....	
10,000	40,000	.001400	.000033	.000067	.000034	Elastic limit.
10,250	41,000	.003833	.002433	....	....	
10,500	42,000	.006000	.002167	....	....	
10,750	43,000	.006900	.000900	....	....	
11,000	44,000	.008200	.001300	....	....	
11,250	45,000	.009333	.001133	....	....	
11,500	46,000	.010033	.000700	....	....	
11,750	47,000	.011000	.000967	....	....	
12,000	48,000	.012333	.001333	....	....	
12,250	49,000	.013500	.001167	....	....	
12,500	50,000	.014733	.001233	....	....	
12,750	51,000	.015933	.001200	....	....	
13,000	52,000	.017700	.001767	....	....	
13,250	53,000	.019000	.001300	....	....	
13,500	54,000	.020677	.001667	....	....	
13,750	55,000	.022000	.001333	....	....	
14,000	56,000	.023677	.001667	....	....	
14,250	57,000	.025333	.001666	....	....	
14,500	58,000	.027067	.001734	....	....	
14,750	59,000	.029000	.001933	....	....	
15,000	60,000	.031000	.002000	....	....	
15,500	62,000	.035500	.004500	....	....	
16,000	64,000	.040400	.004900	....	....	
16,500	66,000	.046667	.006267	....	....	
17,000	68,000	.054333	.007666	....	....	
17,500	70,000	.063333	.009000	....	....	
18,000	72,000	.077333	.014000	....	....	
18,500	74,000	.1000	.022667	....	....	
18,750	75,000	.1667	.0667	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	75,000
Elastic limit per square inch of original section	do...	40,000
Elongation per inch after rupture	inch..	0.2933
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.154
Reduction in area after rupture, per centum of original section		47.2
Position of rupture		½ inch from middle of stem
Character of broken surface		silky
Elongations of inch sections		".26, ".37*, ".15

No. 2167.

Marks, $\begin{matrix}8\,T_{12}\\ M\,T_{8}\,I\end{matrix}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
10, 000	40, 000	.001300	.000167	0.	....	
10, 250	41, 000	.001333	.000033	....	....	
10, 500	42, 000	.001367	.000034	....	....	
10, 750	43, 000	.001400	.000033	....	....	Elastic limit.
11, 000	44, 000	.001567	.000167	....	....	
11, 250	45, 000	.003167	.001600	....	....	
11, 500	46, 000	.006467	.003300	....	....	
11, 750	47, 000	.007600	.001133	....	....	
12, 000	48, 000	.008833	.001233	....	....	
12, 250	49, 000	.010133	.001300	....	....	
12, 500	50, 000	.011300	.001167	....	....	
12, 750	51, 000	.012233	.000933	....	....	
13, 000	52, 000	.013400	.001167	....	....	
13, 250	53, 000	.014367	.000967	....	....	
13, 500	54, 000	.015800	.001433	....	....	
13, 750	55, 000	.016933	.001133	....	....	
14, 000	56, 000	.018333	.001400	....	....	
14, 250	57, 000	.019633	.001300	....	....	
14, 500	58, 000	.020967	.001334	....	....	
14, 750	59, 000	.022300	.001333	....	....	
15, 000	60, 000	.024033	.001733	....	....	
15, 500	62, 000	.027500	.003467	....	....	
16, 000	64, 000	.031333	.003833	....	....	
16, 500	66, 000	.035333	.004000	....	....	
17, 000	68, 000	.040667	.005334	....	....	
17, 500	70, 000	.048000	.007333	....	....	
18, 000	72, 000	.054500	.006500	....	....	
18, 500	74, 000	.065000	.010500	....	....	
19, 000	76, 000	.0767	.0117	....	....	
19, 500	78, 000	.1067	.0300	....	....	
19, 760	79, 040	.1700	.0633	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	79, 040
Elastic limit per square inch of original section	do...	43, 000
Elongation per inch after rupture	inch..	0. 2400
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44. 6
Position of rupture		".05 from middle of stem
Character of broken surface		silky
Elongation of inch sections		".20, ".39*, ".13

No. 1268.

Marks, $\overset{8\,T_{1}^{3}}{M\,T}$, O
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000333	.000200	0.	....	
3, 750	15, 000	.000500	.000167	0.	....	
5, 000	20, 000	.000667	.000167	0.	....	
6, 250	25, 000	.000867	.000200	.000067	.000067	
7, 500	30, 000	.001067	.000200	.000100	.000033	
8, 750	35, 000	.001200	.000133	.000100	0.	
9, 000	36, 000	.001267	.000067	....	....	
9, 250	37, 000	.001300	.000033	....	....	
9, 500	38, 000	.001367	.000067	....	....	
9, 750	39, 000	.001400	.000033	....	....	
10, 000	40, 000	.001433	.000033	.000100	0.	
10, 250	41, 000	.001467	.000034	....	....	Elastic limit.
10, 500	42, 000	.005667	.004200	....	....	
10, 750	43, 000	.008333	.002666	....	....	
11, 000	44, 000	.009667	.001334	....	....	
11, 250	45, 000	.010400	.000733	....	....	
11, 500	46, 000	.012000	.001600	....	....	
11, 750	47, 000	.013000	.001000	....	....	
12, 000	48, 000	.013933	.000933	....	....	
12, 250	49, 000	.014667	.000734	....	....	
12, 500	50, 000	.016000	.001333	....	....	
12, 750	51, 000	.017067	.001067	....	....	
13, 000	52, 000	.018967	001900	....	....	
13, 250	53, 000	.020667	.001700	....	....	
13, 500	54, 000	.022333	.001666	....	....	
13, 750	55, 000	.023333	.001000	....	....	
14, 000	56, 000	.024333	.001000	....	....	
14, 250	57, 000	.025700	.001367	....	....	
14, 500	58, 000	.027400	.001700	....	....	
14, 750	59, 000	.029200	.001800	....	....	
15, 000	60, 000	.031333	.002133	....	....	
15, 500	62, 000	.035000	.003667	....	....	
16, 000	64, 000	.040000	.005000	....	....	
16, 500	66, 000	.045500	.005500	....	....	
17, 000	68, 000	.051667	.006167	....	....	
17, 500	70, 000	.059333	.007666	....	....	
18, 000	72, 000	.069000	.009667	....	....	
18, 500	74, 000	.0867	.0177	....	....	
19, 000	76, 000	.1067	.0200	....	....	
19, 210	76, 840	.1433	.0366	....	....	Tensile strength.

General summary.

Tensile strength, per square inch of original section	pounds..	76, 840
Elastic limit per square inch of original section	do...	41, 000
Elongation per inch after rupture	inch...	0. 2300
Elongation per inch under strain at elastic limit	do...	.001467
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section		52. 2
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.44*, ″.16, ″.09

No. 2169.

Marks, $\mathrm{M}\,{}^{8}\mathrm{T}_{1},{}^{\mathrm{T}_{12}}\mathrm{M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000233	.000100	0.	....	
3,750	15,000	.000400	.000167	0.	....	
5,000	20,000	.000567	.000167	0.	....	
6,250	25,000	.000733	.000166	0.	....	
7,500	30,000	.000900	.000167	0.	....	
8,750	35,000	.001067	.000167	0.	....	
9,000	36,000	.001133	.000066	....	....	
9,250	37,000	.001167	.000034	....	....	
9,500	38,000	.001200	.000033	....	....	
9,750	39,000	.001233	.000033	....	....	
10,000	40,000	.001267	.000034	.000033	.000033	Elastic limit.
10,250	41,000	.001400	.000133	....	....	
10,500	42,000	.010733	.009333	....	....	
10,750	43,000	.011667	.000934	....	....	
11,000	44,000	.012700	.001033	....	....	
11,250	45,000	.013833	.001133	....	....	
11,500	46,000	.015333	.001500	....	....	
11,750	47,000	.016167	.000834	....	....	
12,000	48,000	.017467	.001300	....	....	
12,250	49,000	.018733	.001266	....	....	
12,500	50,000	.020067	.001334	....	....	
12,750	51,000	.021333	.001266	....	....	
13,000	52,000	.023333	.002000	....	....	
13,250	53,000	.024533	.001200	....	....	
13,500	54,000	.026367	.001834	....	....	
13,750	55,000	.027867	.001500	....	....	
14,000	56,000	.029833	.001966	....	....	
14,250	57,000	.031433	.001600	....	....	
14,500	58,000	.033333	.001900	....	....	
14,750	59,000	.035067	.001734	....	....	
15,000	60,000	.038000	.002933	....	....	
15,500	62,000	.042500	.004500	....	....	
16,000	64,000	.048833	.006333	....	....	
16,500	66,000	.055000	.006167	....	....	
17,000	68,000	.063333	.008333	....	....	
17,500	70,000	.073333	.010000	....	....	
18,000	72,000	.0933	.019967	....	....	
18,500	74,000	.1233	.0300	....	....	
18,820	75,280	.1800	.0567	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	75,280
Elastic limit per square inch of original section	do...	40,000
Elongation per inch after rupture	inch..	0.2567
Elongation per inch under strain at elastic limit	do...	.001267
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44.6
Position of rupture		″.90 from neck
Character of broken surface		silky; slight granulation
Elongation of inch sections		″.37*, ″.22, ″.18

NEW TUBE No. 13.

No. 2181.

Marks, $\frac{8\,T_{13}}{B\,T_{3}\,1}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000400	.000133	0.	....	
5,000	20,000	.000600	.000200	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000900	.000133	0.	....	
8,750	35,000	.001033	.000133	0.	....	
9,000	36,000	.001067	.000034	....	....	
9,250	37,000	.001133	.000066	....	....	
9,500	38,000	.001167	.000034	....	....	
9,750	39,000	.001200	.000033	....	....	
10,000	40,000	.001233	.000033	0.	....	
10,250	41,000	.001300	.000067	....	....	Elastic limit.
10,500	42,000	.002133	.000833	....	....	
10,750	43,000	.003333	.001200	....	....	
11,000	44,000	.005500	.002167	....	....	
11,250	45,000	.007400	.001900	....	....	
11,500	46,000	.008667	.001267	....	....	
11,750	47,000	.009733	.001066	....	....	
12,000	48,000	.011200	.001467	....	....	
12,250	49,000	.012167	.000967	....	....	
12,500	50,000	.013567	.001400	....	....	
12,750	51,000	.014667	.001100	....	....	
13,000	52,000	.016000	.001333	....	....	
13,250	53,000	.017333	.001333	....	....	
13,500	54,000	.019000	.001667	....	....	
13,750	55,000	.020233	.001233	....	....	
14,000	56,000	.021800	.001567	....	....	
14,250	57,000	.023333	.001533	....	....	
14,500	58,000	.025133	.001800	....	....	
14,750	59,000	.027333	.002200	....	....	
15,000	60,000	.029667	.002334	....	....	
15,500	62,000	.033833	.004166	....	....	
16,000	64,000	.038500	.004667	....	....	
16,500	66,000	.044500	.006000	....	....	
17,000	68,000	.052333	.007833	....	....	
17,500	70,000	.061667	.009334	....	....	
18,000	72,000	.075000	.013333	....	....	
18,500	74,000	.0967	.0217	....	....	
18,880	75,520	.1667	.0700	....	....	Tensile strength.

General summary.

Specific gravity		7.8573
Hardness		12.84
Tensile strength per square inch of original section	pounds	75,520
Elastic limit per square inch of original section	do	41,000
Elongation per inch after rupture	inch	0.2667
Elongation per inch under strain at elastic limit	do	.001300
Reduction in diameter at point of rupture	do	.184
Reduction in area after rupture, per centum of original section		54.6
Position of rupture		1¼″ from neck
Character of broken surface		silky
Elongation of inch sections		″.85*, ″.30, ″.15

No. 2182.

Marks, $^{8}_{B}\,{}^{T_{u}}_{T,}\,O$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000667	.000200	0.	....	
6, 250	25, 000	.000800	.000133	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
9, 000	36, 000	.001133	0.	....	....	
9, 250	37, 000	.001167	.000034	....	....	
9, 500	38, 000	.001200	.000033	....	....	
9, 750	39, 000	.001233	.000033	....	....	
10, 000	40, 000	.001267	.000034	0.	....	
10, 250	41, 000	.001300	.000033	....	....	
10, 500	42, 000	.001367	.000067	....	....	
10, 750	43, 000	.001400	.000033	....	....	
11, 000	44, 000	.001467	.000067	....	....	Elastic limit.
11, 250	45, 000	.007167	.005700	....	....	
11, 500	46, 000	.008100	.000933	....	....	
11, 750	47, 000	.009000	.000900	....	....	
12, 000	48, 000	.010067	.001067	....	....	
12, 250	49, 000	.011133	.001066	....	....	
12, 500	50, 000	.012333	.001200	....	....	
12, 750	51, 000	.013333	.001000	....	....	
13, 000	52, 000	.014400	.001067	....	....	
13, 250	53, 000	.015667	.001267	....	....	
13, 500	54, 000	.016667	.001000	....	....	
13, 750	55, 000	.017967	.001300	....	....	
14, 000	56, 000	.019633	.001666	....	....	
14, 250	57, 000	.021067	.001434	....	....	
14, 500	58, 000	.022500	.001433	....	....	
14, 750	59, 000	.024000	.001500	....	....	
15, 000	60, 000	.025933	.001933	....	....	
15, 500	62, 000	.029333	.003400	....	....	
16, 000	64, 000	.033333	.004000	....	....	
16, 500	66, 000	.038000	.004667	....	....	
17, 000	68, 000	.042667	.004667	....	....	
17, 500	70, 000	.049000	.006333	....	....	
18, 000	72, 000	.057500	.008500	....	....	
18, 500	74, 000	.067667	.010167	....	....	
19, 000	76, 000	.0900	.022333	....	....	
19, 500	78, 000	.1100	.0200	....	....	
19, 700	78, 800	.1667	.0567	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	78, 800
Elastic limit per square inch of original section	do...	44, 000
Elongation per inch after rupture	inch..	0. 2600
Elongation per inch under strain at elastic limit	do...	.001467
Reduction in diameter at point of rupture	do...	.175
Reduction in area after rupture, per centum of original section		52. 2
Position of rupture		½ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.25, ″.40*, ″.13

No. 2183.

Marks, $\overset{8}{B}\,\overset{T_{12}}{T_{10}}\,M$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001100	.000133	0.	....	
9, 000	36, 000	.001167	.000067	....	....	
9, 250	37, 000	.001200	.000033	....	....	
9, 500	38, 000	.001267	.000067	....	....	
9, 750	39, 000	.001333	.000066	....	....	
10, 000	40, 000	.001400	.000067	.000133	.000133	Elastic limit.
10, 520	41, 000	.002300	.000900	....	....	
10, 500	42, 000	.004000	.001700	....	....	
10, 750	43, 000	.005033	.001033	....	....	
11, 000	44, 000	.006200	.001167	....	....	
11, 250	45, 000	.007200	.001000	....	....	
11, 500	46, 000	.008333	.001133	....	....	
11, 750	47, 000	.009500	.001167	....	....	
12, 000	48, 000	.010667	.001167	....	....	
12, 250	49, 000	.011400	.000733	....	....	
12, 500	50, 000	.012667	.001267	....	....	
12, 750	51, 000	.013767	.001100	....	....	
13, 000	52, 000	.015333	.001566	....	....	
13, 250	53, 000	.016667	.001334	....	....	
13, 500	54, 000	.018000	.001333	....	....	
13, 750	55, 000	.019167	.001167	....	....	
14, 000	56, 000	.020400	.001233	....	....	
14, 250	57, 000	.021733	.001333	....	....	
14, 500	58, 000	.023733	.002000	....	....	
14, 750	59, 000	.025167	.001434	....	....	
15, 000	60, 000	.027667	.002500	....	....	
15, 500	62, 000	.030833	.003166	....	....	
16, 000	64, 000	.034733	.003900	....	....	
16, 500	66, 000	.040000	.005267	....	....	
17, 000	68, 000	.045667	.005667	....	....	
17, 500	70, 000	.052000	.006333	....	....	
18, 000	72, 000	.061667	.009667	....	....	
18, 500	74, 000	.0733	.011633	....	....	
19, 000	76, 000	.1000	.0267	....	....	
19, 250	77, 000	.1467	.0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds.. 77, 000
Elastic limit per square inch of original section..........do... 40, 000
Elongation per inch after rupture..........inch.. 0. 2433
Elongation per inch under strain at elastic limit..........do... .001400
Reduction in diameter at point of rupture..........do... .174
Reduction in area after rupture, per centum of original section.......... 52. 2
Position of rupture..........″.95 from neck
Character of broken surface..........silky
Elongation of inch sections..........″.40*, ″.19, ″.14

No. 2184.

Marks, $\overset{8\,T_{18}}{M\,T_4\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
9,000	36,000	.001133	0.	....	....	
9,250	37,000	.001167	.000034	....	....	
9,500	38,000	.001200	.000033	....	....	
9,750	39,000	.001233	.000033	....	....	
10,000	40,000	.001267	.000034	0.	....	
10,250	41,000	.001333	.000066	....	....	
10,500	42,000	.001367	.000034	....	....	
10,750	43,000	.001400	.000033	....	....	Elastic limit.
11,000	44,000	.012133	.010733	....	....	
11,250	45,000	.012633	.000500	....	....	
11,500	46,000	.013233	.000600	....	....	
11,750	47,000	.014000	.000767	....	....	
12,000	48,000	.015100	.001100	....	....	
12,250	49,000	.016667	.001567	....	....	
12,500	50,000	.018067	.001400	....	....	
12,750	51,000	.019667	.001600	....	....	
13,000	52,000	.020867	.001200	....	....	
13,250	53,000	.022000	.001133	....	....	
13,500	54,000	.023867	.001867	....	....	
13,750	55,000	.025500	.001633	....	....	
14,000	56,000	.027333	.001833	....	....	
14,250	57,000	.029000	.001667	....	....	
14,500	58,000	.030833	.001833	....	....	
14,750	59,000	.032667	.001834	....	....	
15,000	60,000	.034667	.002000	....	....	
15,500	62,000	.039167	.004500	....	....	
16,000	64,000	.043733	.004566	....	....	
16,500	66,000	.050000	.006267	....	....	
17,000	68,000	.056667	.006667	....	....	
17,500	70,000	.0667	.010033	....	....	
18,000	72,000	.0800	.0133	....	....	
18,500	74,000	.1000	.0200	....	....	
19,000	76,000	.1300	.0300	....	....	
19,200	76,800	.1733	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section .... pounds..	76,800
Elastic limit per square inch of original section .... do...	43,000
Elongation per inch after rupture .... inch..	0.2567
Elongation per inch under strain at elastic limit .... do...	.001400
Reduction in diameter at point of rupture .... do...	.154
Reduction in area after rupture, per centum of original section	47.2
Position of rupture	1 inch from neck
Character of broken surface	silky
Elongation of inch sections	″.40*, ″.21, ″.16

No. 2185.

Marks, $\overset{8\,T_{18}}{M\,T_{1}O}$

Diameter, ″.565.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	—.000033	—.000033	
2,500	10,000	.000233	.000133	—.000033	0.	
3,750	15,000	.000400	.000167	—.000033	0.	
5,000	20,000	.000567	.000167	—.000033	0.	
6,250	25,000	.000733	.000166	—.000033	0.	
7,500	30,000	.000900	.000167	—.000033	0.	
8,750	35,000	.001033	.000133	—.000033	0.	
9,000	36,000	.001100	.000067	....	....	
9,250	37,000	.001133	.000033	....	....	
9,500	38,000	.001167	.000034	....	....	
9,750	39,000	.001200	.000033	....	....	
10,000	40,000	.001233	.000033	....	....	
10,250	41,000	.001267	.000034	....	....	Elastic limit.
10,500	42,000	.005267	.004000	....	....	
10,750	43,000	.006500	.001233	....	....	
11,000	44,000	.008367	.001867	....	....	
11,250	45,000	.009438	.001066	....	....	
11,500	46,000	.010533	.001100	....	....	
11,750	47,000	.011400	.000867	....	....	
12,000	48,000	.012800	.001400	....	....	
12,250	49,000	.013733	.000933	....	....	
12,500	50,000	.014967	.001234	....	....	
12,750	51,000	.016200	.001233	....	....	
13,000	52,000	.017400	.001200	....	....	
13,250	53,000	.018633	.001233	....	....	
13,500	54,000	.020000	.001367	....	....	
13,750	55,000	.021167	.001167	....	....	
14,000	56,000	.022533	.001366	....	....	
14,250	57,000	.024067	.001534	....	....	
14,500	58,000	.026000	.001933	....	....	
14,750	59,000	.027400	.001400	....	....	
15,000	60,000	.029333	.001933	....	....	
15,500	62,000	.033000	.003667	....	....	
16,000	64,000	.037067	.004067	....	....	
16,500	66,000	.042667	.005600	....	....	
17,000	68,000	.048333	.005666	....	....	
17,500	70,000	.055500	.007167	....	....	
18,000	72,000	.064000	.008500	....	....	
18,500	74,000	.0767	.0127	....	....	
19,000	76,000	.1000	.0233	....	....	
19,460	77,840	.1467	.0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section .... pounds..	77,840
Elastic limit per square inch of original section .... do...	41,000
Elongation per inch after rupture .... inch..	0.2333
Elongation per inch under strain at elastic limit .... do ..	.001267
Reduction in diameter at point of rupture .... do...	.185
Reduction in area after rupture, per centum of original section	54 6
Position of rupture	″.70 from neck
Character of broken surface	silky
Elongation of inch sections	″.43*, ″.15, ″.12

No. 2186.

Marks, $^{8\,T_{11}}_{M\,T.\,M}$
Diameter, ''.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000833	.000166	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001167	.000167	0.	....	
9,000	36,000	.001200	.000033	....	....	
9,250	37,000	.001233	.000033	....	....	
9,500	38,000	.001267	.000034	....	....	
9,750	39,000	.001300	.000033	....	....	
10,000	40,000	.001333	.000033	0.	....	
10,250	41,000	.001367	.000034	....	....	
10,500	42,000	.001400	.000033	....	....	
10,750	43,000	.001467	.000067	....	....	
11,000	44,000	.001500	.000033	....	....	
11,250	45,000	.001533	.000033	....	....	
11,500	46,000	.001633	.000100	....	....	Elastic limit.
11,700	47,000	.003167	.001534	....	....	
12,000	48,000	.007067	.003900	....	....	
12,250	49,000	.008167	.001100	....	....	
12,500	50,000	.009667	.001500	....	....	
12,750	51,000	.010267	.000600	....	....	
13,000	52,000	.011333	.001066	....	....	
13,250	53,000	.012333	.001000	....	....	
13,500	54,000	.013533	.001200	....	....	
13,750	55,000	.014667	.001134	....	....	
14,000	56,000	.016000	.001333	....	....	
14,250	57,000	.017100	.001100	....	....	
14,500	58,000	.018667	.001567	....	....	
14,750	59,000	.019833	.001166	....	....	
15,000	60,000	.021500	.001667	....	....	
15,500	62,000	.025333	.003833	....	....	
16,000	64,000	.028167	.002834	....	....	
16,500	66,000	.032167	.004000	....	....	
17,000	68,000	.036333	.004166	....	....	
17,500	70,000	.041333	.005000	....	....	
18,000	72,000	.047667	.006334	....	....	
18,500	74,000	.055500	.007833	....	....	
19,000	76,000	.064667	.009167	....	....	
19,500	78,000	.0833	.018633	....	....	
20,000	80,000	.1167	.0334	....	....	
20,100	80,400	.1533	.0366	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80,400
Elastic limit per square inch of original section	do...	46,000
Elongation per inch after rupture	inch..	0.2467
Elongation per inch under strain at elastic limit	do...	.001633
Reduction in diameter at point of rupture	do...	.165
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		''.05 from middle of stem
Character of broken surface		silky
Elongation of inch sections		''.17, ''.41*, ''.16

NEW TUBE NO. 15.

No. 2350.

Marks, $\frac{8\,T_{14}}{B\,T,\,1}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,200	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000400	.000133	0.	....	
5,000	20,000	.000533	.000133	0.	....	
6.250	25,000	.000700	.000167	0.	....	
7,500	30,000	.000900	.000200	0.	....	
8,750	35,000	.001067	.000167	0.	....	
10,000	40,000	.001233	.000160	0.	....	
10,250	41,000	.001267	.000034	....	....	
10,500	42,000	.001300	.000033	....	....	
10,750	43,000	.001300	0.	....	....	Elastic limit.
11,000	44,000	.013433	.012133	....	....	
11,250	45,000	.014167	.000734	....	....	
11,500	46,000	.015500	.001333	....	....	
11,750	47,000	.016833	.001333	....	....	
12,000	48,000	.018600	.001767	....	....	
12,250	49,000	.019767	.001167	....	....	
12,500	50,000	.021800	.002033	....	....	
13,000	52,000	.025767	.003967	....	....	
13,500	54,000	.030000	.004233	....	....	
14,000	56,000	.034667	.004667	....	....	
14,500	58,000	.040000	.005333	....	....	
15,000	60,000	.046333	.006333	....	....	
15,500	62,000	.054500	.008167	....	....	
16,000	64,000	.063000	.008500	....	....	
16,500	66,000	.0767	.0137	....	....	
17,000	68,000	.0967	.0200	....	....	
17,500	70,000	.1500	.0533	....	....	
17,580	70,320	.1800	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	70,320
Elastic limit per square inch of original section	do...	43,000
Elongation per inch after rupture	inch..	0.3000
Elongation per inch under strain at elastic limit	do...	.001300
Reduction in diameter at point of rupture	do...	.204
Reduction in area after rupture, per centum of original section		59.3
Position of rupture		1″.25 frrom neck
Character of broken surface		silky
Elongation of inch section		″.17, ″.48*, ″.25

No. 2351.

Marks, $\overset{8\,T_{15}}{B\,T,\,O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000267	.000134	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001100	.000167	0.	....	
10, 000	40, 000	.001267	.000167	0.	....	
11, 250	45, 000	.001467	.000200	.000033	.000033	
11, 500	46, 000	.001500 .016867	.000033 .015367	....	....	Elastic limit.
11, 750	47, 000	.017467	.000600	....	....	
12, 000	48, 000	.018733	.001266	....	....	
12, 250	49, 000	.020000	.001267	....	....	
12, 500	50, 000	.022333	.002333	....	....	
13, 000	52, 000	.025833	.003500	....	....	
13, 500	54, 000	.029833	.004000	....	....	
14, 000	56, 000	.034500	.004667	....	....	
14, 500	58, 000	.039333	.004833	....	....	
15, 000	60, 000	.045333	.006000	....	....	
15, 500	62, 000	.053333	.008000	....	....	
16, 000	64, 000	.060667	.007334	....	....	
16, 500	66, 000	.0733	.012633	....	....	
17, 000	68, 000	.0933	.0200	....	....	
17, 500	70, 000	.1200	.0267	....	....	
17, 800	71, 200	.1867	.0667	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 71, 200
Elastic limit per square inch of original section ....do . 46, 000
Elongation per inch after rupture ....inch.. 0. 2867
Elongation per inch under strain at elastic limit....................do... .001500
Reduction in diameter at point of rupture....................do... .204
Reduction in area after rupture, per centum of original section 59. 3
Position of rupture ....at middle of stem
Character of broken surface ....silky
Elongation of inch sections....................″.18, ″.50*, ″.18

No. 2352.

Marks, $\overset{8\ T_{18}}{B\ T_{10}\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000333	.000200	0.	....	
3, 750	15, 000	.000467	.000134	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
10, 000	40, 000	.001333 .006167	.000200 .004834	.000067	.000067	Elastic limit.
10, 250	41, 000	.011333	.005166	....	....	
10, 500	42, 000	.012333	.001000	....	....	
10, 750	43, 000	.013167	.000834	....	....	
11, 000	44, 000	.014667	.001500	....	....	
11, 250	45, 000	.015833	.001166	....	....	
11, 500	46, 000	.017533	.001700	....	....	
11, 750	47, 000	.019333	.001800	....	....	
12, 000	48, 000	.020667	.001334	....	....	
12, 250	49, 000	.022333	.001666	....	....	
12, 500	50, 000	.024367	.002034	....	....	
13, 000	52, 000	.028167	.003800	....	....	
13, 500	54, 000	.032167	.004000	....	....	
14, 000	56, 000	.038167	.006000	....	....	
14, 500	58, 000	.043333	.005166	....	....	
15, 000	60, 000	.050000	.006667	....	....	
15, 500	62, 000	.057667	.007677	....	....	
16, 000	64, 000	.068333	.010666	....	....	
16, 500	66, 000	.0867	.0184	....	....	
17, 000	68, 000	.1067	.0200	....	....	
17, 500	70, 000	.1633	.0566	....	....	
17, 550	70, 200	.2067	.0434	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	70, 200
Elastic limit per square inch of original section..........do...	40, 000
Elongation per inch after rupture..........inch....	0. 3067
Elongation per inch under strain at elastic limit..........do..	.001333
Reduction in diameter at point of rupture..........do...	.194
Reduction in area after rupture, per centum of original section..........	57. 0
Position of rupture..........	1″.50 from neck
Character of broken surface..........	silky
Elongation of inch sections..........	″.18, ″.49*, ″.25

No. 2353.

Marks, $\begin{matrix}8\ T_{15}\\ M\ T_{3}\ I\end{matrix}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000267	.000134	0.	....	
3, 750	15, 000	.000400	.000133	0.	....	
5, 000	20, 000	.000567	.000167	0.	....	
6, 250	25, 000	.000733	.000166	0.	....	
7, 500	30, 000	.000900	.000167	0.	....	
8, 750	35, 000	.001067	.000167	0.	....	
10, 000	40, 000	.001233	.000166	0.	....	
10, 250	41, 000	.001267	.000034	....	....	Elastic limit.
10, 500	42, 000	.001400	.000133	....	....	
10, 750	43, 000	.001533	.000133	....	....	
11, 000	44, 000	.012333	.010800	....	....	
11, 250	45, 000	.012833	.000500	....	....	
11, 500	46, 000	.014000	.001167	....	....	
11, 750	47, 000	.014900	.000900	....	....	
12, 000	48, 000	.016367	.001467	....	....	
12, 250	49, 000	.017500	.001183	....	....	
12, 500	50, 000	.019067	.001567	....	....	
13, 000	52, 000	.022000	.002933	....	....	
13, 500	54, 000	.024667	.002667	....	....	
14, 000	56, 000	.028167	.003500	....	....	
14, 500	58, 000	.032667	.004500	....	....	
15, 000	60, 000	.037667	.005000	....	....	
15, 500	62, 000	.042833	.005166	....	....	
16, 000	64, 000	.048000	.005167	....	....	
16, 500	66, 000	.055167	.007167	....	....	
17, 000	68, 000	.063333	.008166	....	....	
17, 500	70, 000	.0733	.009967	....	....	
18, 000	72, 000	.0933	.0200	....	....	
18, 500	74, 000	.1200	.0267	....	....	
18, 790	75, 160	.1767	.0567	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..............pounds..	75, 160
Elastic limit per square inch of original section..............do...	41, 000
Elongation per inch after rupture..............inch..	0. 2933
Elongation per inch under strain at elastic limit..............do...	.001267
Reduction in diameter at point of rupture..............do...	.194
Reduction in area after rupture, per centum of original section..............	57. 0
Position of rupture..............	1″.50 from neck
Character of broken surface..............	silky; opened a crack in stem near the point of rupture
Elongation of inch sections..............	″.21, ″.42*, ″.25

No. 2354.

Marks, $\overset{8}{\text{M}}\,\overset{\text{T}_{15}}{\text{T}},\text{O}$
Diameter, ''.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000867	.000234	0.	....	
7,500	30,000	.001000	.000133	0.	....	
8,750	35,000	.001133	.000133	0.	....	
10,000	40,000	.001367	.000234	.000033	.000033	
10,250	41,000	.001400	.000033	....	....	
10,500	42,000	.001467	.000067	....	....	
10,750	43,000	.001467	0.	....	....	Elastic limit.
11,000	44,000	.001567	.000100	....	....	
11,250	45,000	.010667	.009100	....	....	
11,500	46,000	.011667	.001000	....	....	
11,750	47,000	.012367	.000700	....	....	
12,000	48,000	.013400	.001033	....	....	
12,250	49,000	.015033	.001633	....	....	
12,500	50,000	.016667	.001634	....	....	
13,000	52,000	.019167	.002500	....	....	
13,500	54,000	.022333	.003166	....	....	
14,000	56,000	.025167	.002834	....	....	
14,500	58,000	.028833	.003666	....	....	
15,000	60,000	.032500	.003667	....	....	
15,500	62,000	.037200	.004700	....	....	
16,000	64,000	.042333	.005133	....	....	
16,500	66,000	.048333	.006000	....	....	
17,000	68,000	.055300	.007167	....	....	
17,500	70,000	.066000	.010500	....	....	
18,000	72,000	.0767	.0107	....	....	
18,500	74,000	.0933	.0166	....	....	
19,000	76,000	.1367	.0434	....	....	
19,100	76,400	.1667	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	76,400
Elastic limit per square inch of original section ....do...	43,000
Elongation per inch after rupture ....inch..	0.2500
Elongation per inch under strain at elastic limit ....do...	.001467
Reduction in diameter at point of rupture ....do...	.195
Reduction in area after rupture, per centum of original section	57.0
Position of rupture	1''.36 from neck
Character of broken surface	silky
Elongation of inch sections	''.14, ''.43*, ''.20

No. 2355.

Marks, $\overset{8\ T_{15}}{M\ T_{10}\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

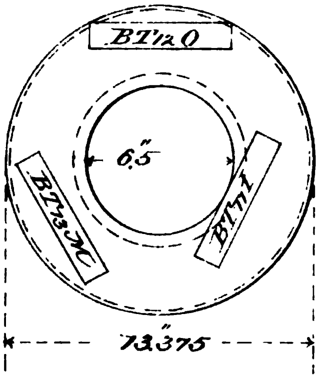
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000467	.000200	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
9,500	38,000	.001233	.000100	....	....	
9,750	39,000	.001300	.000067	....	....	Elastic limit.
10,000	40,000	.011667	.010367	....	....	
10,250	41,000	.012033	.000366	....	....	
10,500	42,000	.012833	.000800	....	....	
10,750	43,000	.013833	.001000	....	....	
11,000	44,000	.015667	.001834	....	....	
11,250	45,000	.017000	.001333	....	....	
11,500	46,000	.018333	.001333	....	....	
11,750	47,000	.019333	.001000	....	....	
12,000	48,000	.021000	.001667	....	....	
12,250	49,000	.022667	.001667	....	....	
12,500	50,000	.024333	.001666	....	....	
13,000	52,000	.027367	.003034	....	....	
13,500	54,000	.031667	.004300	....	....	
14,000	56,000	.036000	.004333	....	....	
14,500	58,000	.040733	.004733	....	....	
15,000	60,000	.046000	.005267	....	....	
15,500	62,000	.053333	.007333	....	....	
16,000	64,000	.063000	.009667	....	....	
16,500	66,000	.0733	.0103	....	....	
17,000	68,000	.0867	.0134	....	....	
17,500	70,000	.1033	.0166	....	....	
18,000	72,000	.1700	.0667	....	....	Tensile strength.

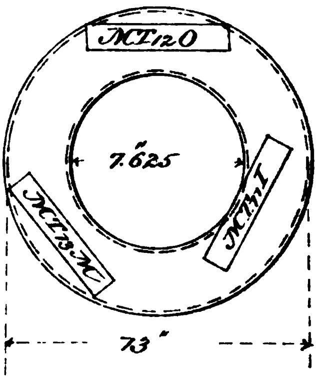
General summary.

Tensile strength per square inch of original section....pounds..	72,000
Elastic limit per square inch of original section....do...	39,000
Elongation per inch after rupture....inch..	0.2733
Elongation per inch under strain at elastic limit....do...	.001300
Reduction in diameter at point of rupture....do...	.174
Reduction in area after rupture, per centum of original section....	52.2
Position of rupture....	1 inch from neck
Character of broken surface....	silky
Elongation of inch sections....	″.20, ″.24, .″38*

New Tube No. 15 8" converted Rifle

Additional specimens





No. 2618.

Marks, $^{8\,T_{18}}_{B\,T_{11}\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000400	.000133	0.	....	
5,000	20,000	.000600	.000200	0.	....	
6,250	25,000	.000733	.000133	0.	....	
7,500	30,000	.000900	.000167	0.	....	
8,750	35,000	.001067	.000167	0.	....	
10,000	40,000	.001267	.000200	....	....	
10,250	41,000	.001333	.000066	....	....	
10,500	42,000	.001367	.000034	....	....	
10,750	43,000	.001433	.000066	....	....	Elastic limit.
11,000	44,000	.002833	.001400	....	....	
11,250	45,000	.004000	.001167	....	....	
11,500	46,000	.005667	.001667	....	....	
11,750	47,000	.006667	.001000	....	....	
12,000	48,000	.007833	.001166	....	....	
12,250	49,000	.008700	.000867	....	....	
12,500	50,000	.010033	.001333	....	....	
13,000	52,000	.012500	.002467	....	....	
13,500	54,000	.014933	.002433	....	....	
14,000	56,000	.017300	.002367	....	....	
14,500	58,000	.020400	.003100	....	....	
15,000	60,000	.023000	.002600	....	....	
15,500	62,000	.026667	.003667	....	....	
16,000	64,000	.029367	.002700	....	....	
16,500	66,000	.033067	.003700	....	....	
17,000	68,000	.037667	.004600	....	....	
17,500	70,000	.0400	.002333	....	....	
18,000	72,000	.0500	.0100	....	....	
18,500	74,000	.0567	.0067	....	....	
19,000	76,000	.0667	.0100	....	....	
19,500	78,000	.0733	.0066	....	....	
20,000	80,000	.1033	.0300	....	....	
20,180	80,720	.1467	.0434	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	80,720
Elastic limit per square inch of original section..........do...	43,000
Elongation per inch after rupture..........inch..	0.2200
Elongation per inch under strain at elastic limit..........do...	.001433
Reduction in diameter at point of rupture..........do...	.164
Reduction in area after rupture, per centum of original section..........	49.7
Position of rupture..........	1″.20 from neck
Character of broken surface..........	silky; opened cracks in surface of stem
Elongation of inch sections..........	″.30*, ″.23, ″.13

No. 2619.

Marks, $\overset{8\,T_{15}}{B\,T_{12}}\,O$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001133	.000200	0.	....	
10, 000	40, 000	.001300	.000167	....	....	
10, 250	41, 000	.001333	.000033	....	....	
10, 500	42, 000	.001367	.000034	....	....	Elastic limit.
10, 750	43, 000	.001467	.000100	....	....	
11, 000	44, 000	.003333	.001866	....	....	
11, 250	45, 000	.004867	.001534	....	....	
11, 500	46, 000	.006167	.001300	....	....	
11, 750	47, 000	.007000	.000833	....	....	
12, 000	48, 000	.008167	.001167	....	....	
12, 250	49, 000	.009500	.001333	....	....	
12, 500	50, 000	.010333	.000833	....	....	
13, 000	52, 000	.012700	.002367	....	....	
13, 500	54, 000	.014667	.001967	....	....	
14, 000	56, 000	.016900	.002233	....	....	
14, 500	58, 000	.019767	002867	....	....	
15, 000	60, 000	.022667	.002900	....	....	
15, 500	62, 000	.025333	.002666	....	....	
16, 000	64, 000	.028467	.003134	....	....	
16, 500	66, 000	.032000	.003533	....	....	
17, 000	68, 000	.036167	.004167	....	....	
17, 500	70, 000	.040867	.004700	....	....	
18, 000	72, 000	.0467	.005833	....	....	
18, 500	74, 000	.0533	.0066	....	....	
19, 000	76, 000	.0633	.0100	....	....	
19, 500	78, 000	.0700	.0067	....	....	
20, 000	80, 000	.0900	.0200	....	....	
20, 460	81, 840	.1500	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	81, 840
Elastic limit per square inch of original section..................do...	42, 000
Elongation per inch after rupture..................inch .	0. 2233
Elongation per inch under strain at elastic limit.................. do...	.001367
Reduction in diameter at point of rupture..................do ..	.184
Reduction in area after rupture, per centum of original section	54. 6
Position of rupture..................	at middle of stem
Character of broken surface..................	silky
Elongation of inch sections..................	″.10, ″.42*, ″.15

No. 2620.

Marks, $\begin{smallmatrix} & 8 & T_{14} & \\ B & T_{12} & & M \end{smallmatrix}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000633	.000200	0.	....	
6,250	25,000	.000767	.000134	0.	....	
7,500	30,000	.000967	.000200	0.	....	
8,750	35,000	.001100	.000133	0.	....	
10,000	40,000	.001333	.000233	....	....	
10,250	41,000	.001400	.000067	....	....	
10,500	42,000	.001467	.000067	....	....	Elastic limit.
10,750	43,000	.001833	.000366	....	....	
11,000	44,000	.003700	.001867	....	....	
11,250	45,000	.004667	.000967	....	....	
11,500	46,000	.006000	.001333	....	....	
11,750	47,000	.007033	.001033	....	....	
12,000	48,000	.008167	.001134	....	....	
12,250	49,000	.009333	.001166	....	....	
12,500	50,000	.010433	.001100	....	....	
13,000	52,000	.013000	.002567	....	....	
13,500	54,000	.015000	.002000	....	....	
14,000	56,000	.017367	.002367	....	....	
14,500	58,000	.020200	.002833	....	....	
15,000	60,000	.023000	.002800	....	....	
15,500	62,000	.026667	.003667	....	....	
16,000	64,000	.030000	.003333	....	....	
16,500	66,000	.034000	.004000	....	....	
17,000	68,000	.038333	.004333	....	....	
17,500	70,000	.0400	.001667	....	....	
18,000	72,000	.0500	.0100	....	....	
18,500	74,000	.0567	.0067	....	....	
19,000	76,000	.0667	.0100	....	....	
19,500	78,000	.0767	.0100	....	....	
20,000	80,000	.1033	.0266	....	....	
20,190	80,760	.1333	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	80,760
Elastic limit per square inch of original section	do	42,000
Elongation per inch after rupture	inch	0.2033
Elongation per inch under strain at elastic limit	do	.001467
Reduction in diameter at point of rupture	do	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		″.90 from neck
Character of broken surface		silky
Elongation of inch sections		″.08, ″.15, ″.32*

No. 2621.

Marks, $\overset{8\,T_{18}}{M\,T_{11}\,I}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000400	.000133	0.	....	
5,000	20,000	.000600	.000200	0.	....	
6,250	25,000	.000733	.000133	0.	....	
7,500	30,000	.000933	.000200	0.	....	
8,750	35,000	.001100	.000167	0.	....	
10,000	40,000	.001300	.000200	0.	....	
10,250	41,000	.001333	.000033	....	....	
10,500	42,000	.001367	.000034	....	....	
10,750	43,000	.001400	.000033	....	....	
11,000	44,000	.001467	.000067	....	....	
11,250	45,000	.001533	.000066	....	....	Elastic limit.
11,500	46,000	.001700	.000167	....	....	
11,750	47,000	.001900	.000200	....	....	
12,000	48,000	.002467	.000567	....	....	
12,250	49,000	.003333	.000866	....	....	
12,500	50,000	.004667	.001334	....	....	
13,000	52,000	.007167	.002500	....	....	
13,500	54,000	.009167	.002000	....	....	
14,000	56,000	.011267	.002100	....	....	
14,500	58,000	.013433	.002166	....	....	
15,000	60,000	.015667	.002234	....	....	
15,500	62,000	.018000	.002333	....	....	
16,000	64,000	.020500	.002500	....	....	
16,500	66,000	.023167	.002667	....	....	
17,000	68,000	.026000	.002833	....	....	
17,500	70,000	.029167	.003167	....	....	
18,000	72,000	.032500	.003333	....	....	
18,500	74,000	.036233	.003733	....	....	
19,000	76,000	.040500	.004267	....	....	
19,500	78,000	.0433	.0028	....	....	
20,000	80,000	.0533	.0100	....	....	
20,500	82,000	.0633	.0100	....	....	
21,000	84,000	.0700	.0067	....	....	
21,500	86,000	.0900	.0200	....	....	
21,920	87,680	.1367	.0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	87,680
Elastic limit per square inch of original section	do...	45,000
Elongation per inch after rupture	inch..	0.2233
Elongation per inch under strain at elastic limit	do...	.001533
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		".85 from neck
Character of broken surface		silky
Elongation of inch sections		".36, ".13, ".18

No. 2622.

Marks, $\overset{8\,T_{18}}{M\,T_{12}\,O}$
Diameter, ''.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000300	.000200	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000600	.000133	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	0.	....	
10,000	40,000	.001300	.000200	0.	....	
11,250	45,000	.001533	.000233	....	....	
11,500	46,000	.001567	.000034	....	....	
11,750	47,000	.001600	.000033	....	....	Elastic limit.
12,000	48,000	.002000	.000400	....	....	
12,250	49,000	.002833	.000833	....	....	
12,500	50,000	.003433	.000600	....	....	
13,000	52,000	.005333	.001900	....	....	
13,500	54,000	.007667	.002334	....	....	
14,000	56,000	.009833	.002166	....	....	
14,500	58,000	.012000	.002167	....	....	
15,000	60,000	.014000	.002000	....	....	
15,500	62,000	.016333	.002333	....	....	
16,000	64,000	.018667	.002334	....	....	
16,500	66,000	.021000	.002333	....	....	
17,000	68,000	.023733	.002733	....	....	
17,500	70,000	.026667	.002934	....	....	
18,000	72,000	.030667	.004000	....	....	
18,500	74,000	.035000	.004333	....	....	
19,000	76,000	.039000	.004000	....	....	
19,500	78,000	.043333	.004333	....	....	
20,000	80,000	.0467	.003367	....	....	
20,500	82,000	.0567	.0100	....	....	
21,000	84,000	.0633	.0066	....	....	
21,500	86,000	.0767	.0134	....	....	
21,980	87,920	.1067	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	87,920
Elastic limit per square inch of original section	do...	47,000
Elongation per inch after rupture	inch..	0.1833
Elongation per inch under strain at elastic limit	do...	.001600
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		1''.10 from neck
Character of broken surface		silky
Elongation of inch sections		''.07, ''.14, ''.34*

No. 2623.

Marks, $\overset{8\ T_{16}}{M\ T_{13}\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000500	.000200	0.	....	
5, 000	20, 000	.000700	.000200	0.	....	
6, 250	25, 000	.000867	.000167	0.	....	
7, 500	30, 000	.001033	.000166	0.	....	
8, 750	35, 000	.001200	.000167	0.	....	
10, 000	40, 000	.001400	.000200	.000067	.000067	
10, 250	41, 000	.001467	.000067	....	....	
10, 500	42, 000	.001533	.000066	....	....	
10, 750	43, 000	.001600	.000067	....	....	
11, 000	44, 000	.001667	.000067	....	....	
11, 250	45, 000	.001700	.000033	....	....	Elastic limit.
11, 500	46, 000	.001833	.000133	....	....	
11, 750	47, 000	.002033	.000200	....	....	
12, 000	48, 000	.002967	.000934	....	....	
12, 250	49, 000	.003667	.000700	....	....	
12, 500	50, 000	.005267	.001600	....	....	
13, 000	52, 000	.007100	.001833	....	....	
13, 500	54, 000	.010000	.002900	....	....	
14, 000	56, 000	.012000	.002000	....	....	
14, 500	58, 000	.014100	.002100	....	....	
15, 000	60, 000	.016333	.002233	....	....	
15, 500	62, 000	.018833	.002500	....	....	
16, 000	64, 000	.021167	.002334	....	....	
16, 500	66, 000	.024000	.002833	....	....	
17, 000	68, 000	.027333	.003333	....	....	
17, 500	70, 000	.030000	.002667	....	....	
18, 000	72, 000	.034000	.004000	....	....	
18, 500	74, 000	.038200	.004200	....	....	
19, 000	76, 000	.043067	.004867	....	....	
19, 500	78, 000	.0467	.003633	....	....	
20, 000	80, 000	.0567	.0100	....	....	
20, 500	82, 000	.0667	.0100	....	....	
21, 000	84, 000	.0767	.0100	....	....	
21, 500	86, 000	.1033	.0266	....	....	
21, 520	86, 080	.1267	.0234	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	86, 080
Elastic limit per square inch of original section	do...	45, 000
Elongation per inch after rupture	inch..	0. 1933
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	.154
Reduction in area after rupture, per centum of original section		47. 2
Position of rupture		1″.50 from neck
Character of broken surface		silky
Elongation of inch sections		″.10, ″.34*, ″.1

NEW TUBE No. 16.

No. 2365.

Marks, $\overset{8\,T_{16}}{B\,T_4\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000567	.000134	0.	....	
6,250	25,000	.000733	.000166	0.	....	
7,500	30,000	.000900	.000167	0.	....	
8,700	35,000	.001067	.000167	0.	....	
9,500	38,000	.001233	.000166	....	....	Elastic limit.
9,750	39,000	.001300	.000067	....	....	
10,000	40,000	.006000	.004700	....	....	
10,250	41,000	.006667	.000667	....	....	
10,500	42,000	.007833	.001166	....	....	
10,750	43,000	.008800	.000967	....	....	
11,000	44,000	.010200	.001400	....	....	
11,250	45,000	.011500	.001300	....	....	
11,500	46,000	.012500	.001000	....	....	
11,750	47,000	.013733	.001233	....	....	
12,000	48,000	.015033	.001300	....	....	
12,250	49,000	.016500	.001467	....	....	
12,500	50,000	.018167	.001667	....	....	
13,000	52,000	.021400	.003233	....	....	
13,500	54,000	.025000	.003600	....	....	
14,000	56,000	.028367	.003367	....	....	
14,500	58,000	.032500	.004133	....	....	
15,000	60,000	.034400	.001900	....	....	
15,500	62,000	.043333	.008933	....	....	
16,000	64,000	.050667	.007334	....	....	
16,500	66,000	.059333	.008666	....	....	
17,000	68,000	.068000	.008667	....	....	
17,500	70,000	.0933	.0253	....	....	
18,000	72,000	.1400 .1667	.0467 .0267	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section .... pounds..	72,000
Elastic limit per square inch of original section .... do...	39,000
Elongation per inch after rupture .... inch..	0.1933
Elongation per inch under strain at elastic limit .... do...	.001300
Reduction in diameter at point of rupture .... do ..	.084
Reduction in area after rupture, per centum of original section	27.6
Position of rupture	1″.65 from neck
Character of broken surface, granular; radiating from a dull spot at the circumference; opened small surface cracks in stem.	
Elongation of inch sections	″.16, ″.28*, ″.14

No. 2366.

Marks, $\frac{8\,T_{16}}{B\,T_{5}\,O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	−.000033	−.000033	
2,500	10,000	.000267	.000167	−.000033	....	
3,750	15,000	.000367	.000100	−.000067	0.	
5,000	20,000	.000500	.000133	−.000067	−.000034	
6,250	25,000	.000633	.000133	−.000067	0.	
7,500	30,000	.000800	.000167	−.000067	0.	
8,750	35,000	.000967	.000167	−.000067	0.	
9,000	36,000	.001000	.000033	....	0.	
9,250	37,000	.001067	.000067	....	....	
9,500	38,000	.001133	.000066	....	....	Elastic limit.
9,750	39,000	.001500	.000367	....	....	
10,000	40,000	.003400	.001900	....	....	
10,250	41,000	.005100	.001700	....	....	
10,500	42,000	.006667	.001567	....	....	
10,750	43,000	.007333	.000666	....	....	
11,000	44,000	.008500	.001167	....	....	
11,250	45,000	.009500	.001000	....	....	
11,500	46,000	.010500	.001000	....	....	
11,750	47,000	.011567	.001067	....	....	
12,000	48,000	.012700	.001133	....	....	
12,250	49,000	.013733	.001033	....	....	
12,500	50,000	.015100	.001367	....	....	
13,000	52,000	.018167	.003067	....	....	
13,500	54,000	.021000	.002833	....	....	
14,000	56,000	.023733	.002733	....	....	
14,500	58,000	.027000	.003267	....	....	
15,000	60,000	.030667	.003667	....	....	
15,500	62,000	.034000	.003333	....	....	
16,000	64,000	.039333	.005333	....	....	
16,500	66,000	.044867	.005534	....	....	
17,000	68,000	.052000	.007133	....	....	
17,500	70,000	.060000	.008000	....	....	
18,000	72,000	.0733	.0133	....	....	
18,500	74,000	.0900	.0167	....	....	
19,000	76,000	.1367	.0467	....	....	
19,030	76,120	.1600	.0233	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section .... pounds..	76,120
Elastic limit per square inch of original section .... do ..	38,000
Elongation per inch after rupture .... inch..	0.2233
Elongation per inch under strain at elastic limit .... do...	.001133
Reduction in diameter at point of rupture .... do...	.114
Reduction in area after rupture, per centum of original section	36.4
Position of rupture	1 inch from neck
Character of broken surface	granular; dull spot at circumference
Elongation of inch sections	″.30*, ″.23, ″.14

No. 2367.

Marks, $^{8\ T_{16}}_{B\ T_{6}\ M}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive Elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000433	.000133	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	0.	....	
10,000	40,000	.001233	.000133	0.	....	Elastic limit.
10,250	41,000	.001367 .001833	.000134 .000466	....	....	
10,500	42,000	.003067	.001234	....	....	
10,750	43,000	.006067	.003000	....	....	
11,000	44,000	.007333	.001266	....	....	
11,250	45,000	.008333	.001000	....	....	
11,500	46,000	.009500	.001167	....	....	
11,750	47,000	.010400	.000900	....	....	
12,000	48,000	.011733	.001333	....	....	
12,250	49,000	.012667	.000934	....	....	
12,500	50,000	.014167	.001500	....	....	
13,000	52,000	.017067	.002900	....	....	
13,500	54,000	.020000	.002933	....	....	
14,000	56,000	.023000	.003000	....	....	
14,500	58,000	.026333	.003333	....	....	
15,000	60,000	.030000	.003667	....	....	
15,500	62,000	.034167	.004167	....	....	
16,000	64,000	.039333	.005166	....	....	
16,500	66,000	.044667	.005334	....	....	
17,000	68,000	.052000	.007333	....	....	
17,500	70,000	.061667	.009667	....	....	
18,000	72,000	.0733	.011633	....	....	
18,500	74,000	.0967	.0234	....	....	
18,880	75,520	.1433	.0466	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	75,520
Elastic limit per square inch of original section	do...	40,000
Elongation per inch after rupture	inch..	0.2433
Elongation per inch under strain at elastic limit	do...	.001233
Reduction in diameter at point of rupture	do...	.195
Reduction in area after rupture, per centum of original section		57.0
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.43, ″.20, ″.13

No. 2368.

Marks, $\substack{S\,T_{16}\\M\,T_{4}\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000233	.000133	0.	....	
3,750	15,000	.000400	.000167	0.	....	
5,000	20,000	.000567	.000167	0.	....	
6,250	25,000	.000700	.000133	0.	....	
7,500	30,000	.000900	.000200	0.	....	
8,750	35,000	.001033	.000133	0.	....	
9,000	36,000	.001067	.000034	....	....	
9,250	37,000	.001100	.000033	....	....	
9,500	38,000	.001167	.000067	....	....	
9,750	39,000	.001233	.000066	....	....	Elastic limit.
10,000	40,000	.001433	.000200	....	....	
10,250	41,000	.001667	.000234	....	....	
10,500	42,000	.002433	.000766	....	....	
10,750	43,000	.003167	.000734	....	....	
11,000	44,000	.004733	.001556	....	....	
11,250	45,000	.006067	.001334	....	....	
11,500	46,000	.007400	.001333	....	....	
11,750	47,000	.008667	.001267	....	....	
12,000	48,000	.009667	.001000	....	....	
12,250	49,000	.010433	.000766	....	....	
12,500	50,000	.011833	.001400	....	....	
13,000	52,000	.014033	.002200	....	....	
13,500	54,000	.017000	.002967	....	....	
14,000	56,000	.019667	.002667	....	....	
14,500	58,000	.022333	.002666	....	....	
15,000	60,000	.025167	.002834	....	....	
15,500	62,000	.028833	.003666	....	....	
16,000	64,000	.032667	.003834	....	....	
16,500	66,000	.036833	.004166	....	....	
17,000	68,000	.041867	.005034	....	....	
17,500	70,000	.048833	.006966	....	....	
18,000	72,000	.058667	.009834	....	....	
18,500	74,000	.072000	.013333	....	....	
19,000	76,000	.0900	.0180	....	....	
19,420	77,680	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	77,680
Elastic limit per square inch of original section	do...	39,000
Elongation per inch after rupture	inch..	0.2033
Elongation per inch under strain at elastic limit	do ..	.001233
Reduction in diameter at point of rupture	do...	.134
Reduction in area after rupture, per centum of original section		41.9
Position of rupture		1 inch from neck
Character of broken surface		granular, 70 per centum; silky, 30 per centum
Elongation of inch sections		″.35*, ″.14, ″.12

No. 2369.

Marks, $\overset{8}{M}\,\overset{T_{16}}{T_{8}}\,O$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000600	.000133	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	0.	....	
10,000	40,000	.001300	.000200	0.	....	
10,250	41,000	.001333	.000033	....	....	
10,500	42,000	.001433	.000100	....	....	Elastic limit.
10,750	43,000	.001633	.000200	....	....	
11,000	44,000	.003333	.001700	....	....	
11,250	45,000	.005000	.001667	....	....	
11,500	46,000	.006200	.001200	....	....	
11,750	47,000	.007167	.000967	....	....	
12,000	48,000	.007833	.000666	....	....	
12,250	49,000	.008500	.000667	....	....	
12,500	50,000	.010000	.001500	....	....	
13,000	52,000	.012100	.002100	....	....	
13,500	54,000	.014667	.002567	....	....	
14,000	56,000	.017333	.002666	....	....	
14,500	58,000	.019833	.002500	....	....	
15,000	60,000	.022833	.003000	....	....	
15,500	62,000	.025667	.002834	....	....	
16,000	64,000	.029167	.003500	....	....	
16,500	66,000	.032667	.003500	....	....	
17,000	68,000	.036867	.004200	....	....	
17,500	70,000	.042167	.005300	....	....	
18,000	72,000	.048333	.005166	....	....	
18,500	74,000	.057333	.009000	....	....	
19,000	76,000	.0667	.009367	....	....	
19,500	78,000	.0800	.0133	....	....	
20,000	80,000	.1133	.0333	....	....	
20,110	80,440	.1467	.0334	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80,440
Elastic limit per square inch of original section	do...	42,000
Elongation per inch after rupture	inch..	0.2467
Elongation per inch under strain at elastic limit	do...	.001433
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section		52.2
Position of rupture		1″.65 from neck
Character of broken surface		silky
Elongation of inch sections		″.15, ″.43*, ″.16

No. 2370.

Marks, $\overset{8}{\mathrm{M}}\ \overset{\mathrm{T}_{16}}{\mathrm{T}_{6}}\ \mathrm{M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000233	.000133	0.	....	
3,750	15,000	.000367	.000134	0.	....	
5,000	20,000	.000500	.000133	0.	....	
6,250	25,000	.000633	.000133	0.	....	
7,500	30,000	.000800	.000167	0.	....	
8,750	35,000	.000967	.000167	0.	....	
10,000	40,000	.001133	.000166	0.	....	Elastic limit.
10,250	41,000	.001267	.000134	....	....	
10,500	42,000	.001500	.000233	....	....	
10,750	43,000	.002167	.000667	....	....	
11,000	44,000	.004133	.001966	....	....	
11,250	45,000	.005733	.001600	....	....	
11,500	46,000	.006667	.000934	....	....	
11,750	47,000	.007700	.001033	....	....	
12,000	48,000	.008667	.000967	....	....	
12,250	49,000	.009700	.001033	....	....	
12,500	50,000	.011000	.001300	....	....	
13,000	52,000	.013500	.002500	....	....	
13,500	54,000	.015733	.002233	....	....	
14,000	56,000	.018333	.002600	....	....	
14,500	58,000	.021500	.003167	....	....	
15,000	60,000	.024667	.003167	....	....	
15,500	62,000	.027700	.003033	....	....	
16,000	64,000	.031667	.003967	....	....	
16,500	66,000	.036167	.004500	....	....	
17,000	68,000	.041333	.005166	....	....	
17,500	70,000	.048500	.007167	....	....	
18,000	72,000	.056333	.007833	....	....	
18,500	74,000	.067833	.011500	....	....	
19,000	76,000	.0900	.022167	....	....	
19,500	78,000	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	78,000
Elastic limit per square inch of original section	do...	40,000
Elongation per inch after rupture	inch..	0.2333
Elongation per inch under strain at elastic limit	do...	.001133
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		1″.5 from neck
Character of broken surface		silky; trace of granulation
Elongation of inch sections		″.17, ″.37*, ″.16

No. 2370.

Marks, $\overset{8\ T_{18}}{M\ T_8\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

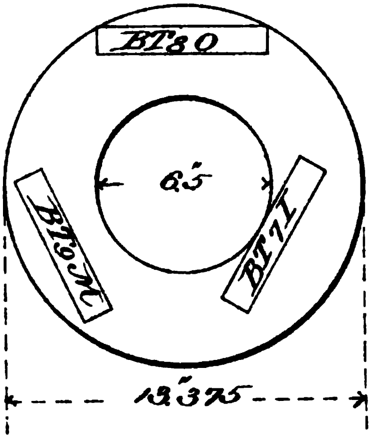
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000233	.000133	0.	....	
3,750	15,000	.000367	.000134	0.	....	
5,000	20,000	.000500	.000133	0.	....	
6,250	25,000	.000633	.000133	0.	....	
7,500	30,000	.000800	.000167	0.	....	
8,750	35,000	.000967	.000167	0.	....	
10,000	40,000	.001133	.000166	0.	....	Elastic limit.
10,250	41,000	.001267	.000134	....	....	
10,500	42,000	.001500	.000233	....	....	
10,750	43,000	.002167	.000667	....	....	
11,000	44,000	.004133	.001966	....	....	
11,250	45,000	.005733	.001600	....	....	
11,500	46,000	.006667	.000934	....	....	
11,750	47,000	.007700	.001033	....	....	
12,000	48,000	.008667	.000967	....	....	
12,250	49,000	.009700	.001033	....	....	
12,500	50,000	.011000	.001300	....	....	
13,000	52,000	.013500	.002500	....	....	
13,500	54,000	.015733	.002233	....	....	
14,000	56,000	.018333	.002600	....	....	
14,500	58,000	.021500	.003167	....	....	
15,000	60,000	.024667	.003167	....	....	
15,500	62,000	.027700	.003033	....	....	
16,000	64,000	.031667	.003967	....	....	
16,500	66,000	.036167	.004500	....	....	
17,000	68,000	.041333	.005166	....	....	
17,500	70,000	.048500	.007167	....	....	
18,000	72,000	.056333	.007833	....	....	
18,500	74,000	.067833	.011500	....	....	
19,000	76,000	.0900	.022167	....	....	
19,500	78,000	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	78,000
Elastic limit per square inch of original section	do	40,000
Elongation per inch after rupture	inch	0.2333
Elongation per inch under strain at elastic limit	do	.001133
Reduction in diameter at point of rupture	do	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		1″.5 from neck
Character of broken surface		silky; trace of granulation
Elongation of inch sections		″.17, ″.37*, ″.16

New Tube No. 76 8" converted Rifle

Additional specimens



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No. 2555.

Marks, $_{\text{B}}\overset{8\,\text{T}_{16}}{\text{T}_{7}\,\text{I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000233	.000133	0.	....	
3,750	15,000	.000400	.000167	0.	....	
5,000	20,000	.000567	.000167	0.	....	
6,250	25,000	.000733	.000166	0.	....	
7,500	30,000	.000900	.000167	0.	....	
8,750	35,000	.001067	.000167	....	....	
10,000	40,000	.001233	.000166	....	....	
10,250	41,000	.001300	.000067	....	....	
10,500	42,000	.001367	.000067	....	....	
10,750	43,000	.001400	.000033	....	....	Elastic limit.
11,000	44,000	.001733	.000333	....	....	
11,250	45,000	.002800	.001067	....	....	
11,500	46,000	.004067	.001267	....	....	
11,750	47,000	.007100	.003033	....	....	
12,000	48,000	.008667	.001567	....	....	
12,250	49,000	.010333	.001666	....	....	
12,500	50,000	.011067	.000734	....	....	
13,000	52,000	.013733	.002666	....	....	
13,500	54,000	.016733	.003000	....	....	
14,000	56,000	.020067	.003334	....	....	
14,500	58,000	.023000	.002933	....	....	
15,000	60,000	.026533	.003533	....	....	
15,500	62,000	.030400	.003867	....	....	
16,000	64,000	.034867	.004467	....	....	
16,500	66,000	.040000	.005133	....	....	
17,000	68,000	.046667	.006667	....	....	
17,500	70,000	.0567	.010033	....	....	
18,000	72,000	.0667	.0100	....	....	
18,500	74,000	.0900	.0233	....	....	
19,000	76,000	.1300	.0400	....	....	
19,020	76,080	.1467	.0167	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	76,080
Elastic limit per square inch of original section ....do...	43,000
Elongation per inch after rupture....................inch..	0.1767
Elongation per inch under strain at elastic limit....................do...	.001400
Reduction in diameter at point of rupture....................do...	.074
Reduction in area after rupture, per centum of original section....................	24.6
Position of rupture	1″.50 from neck

Character of broken surface, granular; radiating from a flaky spot at the circumference; opened cracks in surface of stem.

Elongation of inch sections....................″.17, ″.23*, ″.13

No. 2556.

Marks, $\overset{8\,T_{14}}{B\,T^{9}\,O}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000300	.000200	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	....	....	
9, 000	36, 000	.001167	.000034	....	....	
9, 250	37, 000	.001200	.000033	....	....	
9, 500	38, 000	.001233	.000033	....	....	
9, 750	39, 000	.001267	.000034	....	....	Elastic limit.
10, 000	40, 000	.001400	.000133	....	....	
10, 250	41, 000	.001567	.000167	....	....	
10, 500	42, 000	.003700	.002133	....	....	
10, 750	43, 000	.004700	.001000	....	....	
11, 000	44, 000	.006500	.001800	....	....	
11, 250	45, 000	.007500	.001000	....	....	
11, 500	46, 000	.008833	.001333	....	....	
11, 750	47, 000	.009767	.000934	....	....	
12, 000	48, 000	.010867	.001100	....	....	
12, 250	49, 000	.011933	.001066	....	....	
12, 500	50, 000	.013367	.001434	....	....	
13, 000	52, 000	.015667	.002300	....	....	
13, 500	54, 000	.018567	.002933	....	....	
14, 000	56, 000	.021500	.002933	....	....	
14, 500	58, 000	.025000	.003500	....	....	
15, 000	60, 000	.028167	.003167	....	....	
15, 500	62, 000	.032000	.003833	....	....	
16, 000	64, 000	.036333	.004333	....	....	
16, 500	66, 000	.040833	.004500	....	....	
17, 000	68, 000	.0500	.009167	....	....	
17, 500	70, 000	.0600	.0100	....	....	
18, 000	72, 000	.0700	.0100	....	....	
18, 500	74, 000	.0800	.0100	....	....	
19, 000	76, 000	.1133	.0333	....	....	
19, 160	76, 640	.1567	.0434	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76, 640
Elastic limit per square inch of original section	do...	39, 000
Elongation per inch after rupture	inch..	0. 2633
Elongation per inch under strain at elastic limit	do...	.001267
Reduction in diameter at point of rupture	do...	.184
Reduction in area after rupture, per centum of original section		54. 6
Position of rupture		1″. 5 from neck
Character of broken surface		silky
Elongation of inch sections		″.18, ″.42*, ″.19

No. 2557.

Marks, $\overset{8\ T_{16}}{B\ T_9\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

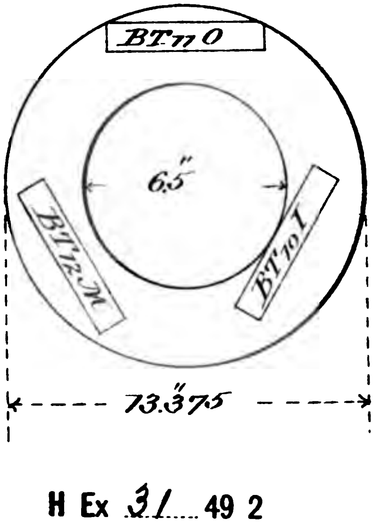
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000300	.000200	0.	....	
3,750	15,000	.000433	.000133	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000800	.000200	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	....	....	
9,000	36,000	.001200	.000067	....	....	
9,250	37,000	.001233	.000033	....	....	
9,500	38,000	.001267	.000034	....	....	
9,750	39,000	.001333	.000066	....	....	
10,000	40,000	.001367	.000034	....	....	Elastic limit.
10,250	41,000	.001467	.000100	....	....	
10,500	42,000	.004667	.003200	....	....	
10,750	43,000	.007333	.002666	....	....	
11,000	44,000	.008000	.000667	....	....	
11,250	45,000	.008800	.000800	....	....	
11,500	46,000	.010000	.001200	....	....	
11,750	47,000	.010833	.000833	....	....	
12,000	48,000	.012233	.001400	....	....	
12,250	49,000	.013367	.001134	....	....	
12,500	50,000	.014667	.001300	....	....	
13,000	52,000	.017067	.002400	....	....	
13,500	54,000	.020000	.002933	....	....	
14,000	56,000	.023000	.003000	....	....	
14,500	58,000	.026667	.003667	....	....	
15,000	60,000	.030000	.003333	....	....	
15,500	62,000	.034000	.004000	....	....	
16,000	61,000	.038667	.004667	....	....	
16,500	66,000	.0433	.004633	....	....	
17,000	68,000	.0533	.0100	....	....	
17,500	70,000	.0633	.0100	....	....	
18,000	72,000	.0733	.0100	....	....	
18,500	74,000	.0933	.0200	....	....	
19,000	76,000	.1267	.0334	....	....	
19,080	76,320	.1733	.0466	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................................pounds.. 76,320
Elastic limit per square inch of original section....................................do... 40,000
Elongation per inch after rupture....................................inch.. 0.2400
Elongation per inch under strain at elastic limit .... do .. .001367
Reduction in diameter at point of rupture...... .. ..do... .134
Reduction in area after rupture, per centum of original section.................. ..... 41.9
Position of rupture ....1″.6 from neck
Character of broken surface....................................silky
Elongation of inch sections....................................″.15, ″.40*, ″.17

New Tube No. 16 8" converted Rifle

Additional specimens



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No. 2612.

Marks, $\overset{8\,T_{16}}{B\,T_{10}\,I}$.
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	. 000133	. 000133	0.	....	
2, 500	10, 000	. 000233	. 000100	0.	....	
3, 750	15, 000	. 000367	. 000134	0.	....	
5, 000	20, 000	. 000533	. 000166	0.	....	
6, 250	25, 000	. 000700	. 000167	0.	....	
7, 500	30, 000	. 000900	. 000200	0.	....	
8, 750	35, 000	. 001100	. 000200	....	....	
9, 000	36, 000	. 001133	. 000033	....	....	
9, 250	37, 000	. 001167	. 000034	....	....	
9, 500	38, 000	. 001267	. 000100	....	....	
9, 750	39, 000	. 001300	. 000033	....	....	
10, 000	40, 000	. 001333	. 000033	....	....	
10, 250	41, 000	. 001367	. 000034	....	....	
10, 500	42, 000	. 001400	. 000033	....	....	
10, 750	43, 000	. 001433	. 000033	....	....	
11, 000	44, 000	. 001500	. 000067	....	....	
11, 250	45, 000	. 001600	. 000100	....	....	Elastic limit.
11, 500	46, 000	. 002667	. 001067	....	....	
11, 750	47, 000	. 004033	. 001366	....	....	
12, 000	48, 000	. 007167	. 003134	....	....	
12, 250	49, 000	. 008333	. 001166	....	....	
12, 500	50, 000	. 009667	. 001334	....	....	
13, 000	52, 000	. 012500	. 002833	....	....	
13, 500	54, 000	. 015033	. 002533	....	....	
14, 000	56, 000	. 018333	. 003300	....	....	
14, 500	58, 000	. 021500	. 003167	....	....	
15, 000	60, 000	. 024667	. 003167	....	....	
15, 500	62, 000	. 028267	. 003600	....	....	
16, 000	64, 000	. 032167	. 003900	....	....	
16, 500	66, 000	. 037167	. 005000	....	....	
17, 000	68, 000	. 0400	. 002833	....	....	
17, 500	70, 000	. 0500	. 0100	....	....	
18, 000	72, 000	. 0633	. 0133	....	....	
18, 500	74, 000	. 0700	. 0067	....	....	
19, 000	76, 000	. 0933	. 0233	....	....	
19, 300	77, 200	. 1433	. 0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	77, 200
Elastic limit per square inch of original section	do...	45, 000
Elongation per inch after rupture	inch..	0. 2567
Elongation per inch under strain at elastic limit	do...	. 001600
Reduction in diameter at point of rupture	do...	. 194
Reduction in area after rupture, per centum of original section		57. 0
Position of rupture		1 inch from neck
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		″.43*, ″.20, ″.14

No. 2613.

Marks, $_{\mathrm{B}}{}^{8}\mathrm{T}_{11}{}^{\mathrm{T}_{16}}\mathrm{O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133			
2,500	10,000	.000300	.000167			
3,750	15,000	.000500	.000200			
5,000	20,000	.000667	.000167			
6,250	25,000	.000800	.000133			
7,500	30,000	.001013	.000233			
8,750	35,000	.001233	.000200			
9,000	36,000	.001267	.000034			
9,250	37,000	.001333	.000066			
9,500	38,000	.001400	.000067			Elastic limit.
9,750	39,000	.001733	.000333			
10,000	40,000	.007233	.005500			
10,250	41,000	.007733	.000500			
10,500	42,000	.008667	.000934			
10,750	43,000	.009900	.001233			
11,000	44,000	.010867	.000967			
11,500	46,000	.013167	.002300			
12,000	48,000	.016000	.002833			
12,500	50,000	.018500	.002500			
13,000	52,000	.021167	.002667			
13,500	54,000	.024167	.003000			
14,000	56,000	.027600	.003433			
14,500	58,000	.031067	.003467			
15,000	60,000	.0367	.005633			
15,500	62,000	.0400	.0033			
16,000	64,000	.0500	.0100			
16,500	66,000	.0600	.0100			
17,000	68,000	.0700	.0100			
17,500	70,000	.0800	.0100			
18,000	72,000	.1000	.0200			
18,500	74,000	.1467	.0467			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	74,003
Elastic limit per square inch of original section	do	38,000
Elongation per inch after rupture	inch	0.2530
Elongation per inch under strain at elastic limit	do	.001400
Reduction in diameter at point of rupture	do	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		1″.30 from neck
Character of broken surface		silky
Elongation of inch sections		″.25, ″.35*, ″.16

No. 2614.

Marks, $\overset{8\ T_{16}}{B\ T_{12}\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

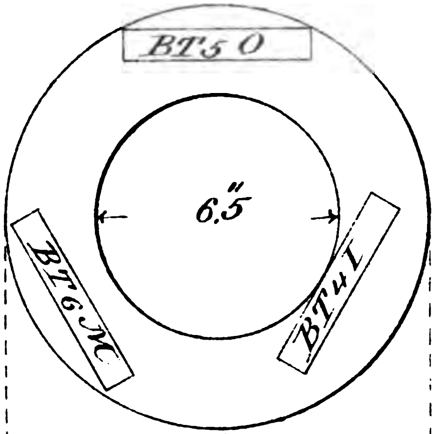
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000433	.000133	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000733	.000133	0.	....	
7,500	30,000	.000933	.000200	0.	....	
8,750	35,000	.001100	.000167	....	....	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001200	.000067	....	....	
9,500	38,000	.001267	.000067	....	....	
9,750	39,000	.001333	.000066	....	....	Elastic limit.
10,000	40,000	.001600	.000267	....	....	
10,250	41,000	.002500	.000900	....	....	
10,500	42,000	.005333	.002833	....	....	
10,750	43,000	.006667	.001334	....	....	
11,000	44,000	.008000	.001333	....	....	
11,250	45,000	.009167	.001167	....	....	
11,500	46,000	.010100	.000933	....	....	
12,000	48,000	.012167	.002067	....	....	
12,500	50,000	.014900	.002733	....	....	
13,000	52,000	.017667	.002767	....	....	
13,500	54,000	.020333	.002666	....	....	
14,000	56,000	.023167	.002834	....	....	
14,500	58,000	.026833	.003666	....	....	
15,000	60,000	.030667	.003834	....	....	
15,500	62,000	.034000	.003333	....	....	
16,000	64,000	.0400	.0060	....	....	
16,500	66,000	.0433	.0033	....	....	
17,000	68,000	.0533	.0100	....	....	
17,500	70,000	.0633	.0100	....	....	
18,000	72,000	.0700	.0067	....	....	
18,500	74,000	.0933	.0233	....	....	
19,000	76,000	.1567	.0634	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76,000
Elastic limit per square inch of original section	do ..	39,000
Elongation per inch after rupture	inch..	0.2600
Elongation per inch under strain at elastic limit	do...	.001333
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section		52.2
Position of rupture		1″.05 from neck
Character of broken surface		silky
Elongation of inch sections		″.45*, ″.21, ″.13

Tube No. 78 8" converted Rifle

Additional specimens



No. 997.

Marks, $\frac{8\ T_{18}}{B\ T_{4}\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000067	.000067	—.000033	—.000033	
2,500	10,000	.000167	.000100	—.000067	—.000034	
3,750	15,000	.000267	.000100	—.000067	0	
5,000	20,000	.000433	.000166	—.000067	0	
6,250	25,000	.000600	.000167	—.000067	0	
7,500	30,000	.000767	.000167	—.000067	0	
7,750	31,000	.000800	.000033			Elastic limit.
8,000	32,000	.000967	.000167			
8,250	33,000	.004067	.003100			
8,500	34,000	.006000	.001933			
8,750	35,000	.007367	.001367	.006067	.006134	
9,000	36,000	.008367	.001000			
9,250	37,000	.009333	.000966			
9,500	38,000	.010600	.001267			
9,750	39,000	.011500	.000900			
10,000	40,000	.012900	.001400	.010933	.001866	
10,250	41,000	.013733	.000833			
10,500	42,000	.014600	.000867			
10,750	43,000	.015700	.001100			
11,000	44,000	.017300	.001600			
11,250	45,000	.018467	.001167			
11,500	46,000	.019767	.001300			
11,750	47,000	.021667	.001900			
12,000	48,000	.022867	.001200			
12,250	49,000	.024133	.001266			
12,500	50,000	.025867	.001734			
13,000	52,000	.029333	.003466			
13,500	54,000	.033833	.004500			
14,000	56,000	.037833	.004000			
14,500	58,000	.043200	.005367			
15,000	60,000	.048667	.005467			
15,500	62,000	.056667	.008000			
16,000	64,000	.064367	.007700			
16,500	66,000	.0767	.012333			
17,000	68,000	.0900	.0133			
17,500	70,000	.1167	.0267			
17,920	71,680	.1867	.0700			Tensile strength.
15,900						Load at time of rupture.

General summary.

Tensile strength per square inch of original section	pounds	71,680
Elastic limit per square inch of original section	do	31,000
Elongation per inch after rupture	inch	0.2800
Elongation per inch under strain at elastic limit	do	.000800
Reduction in diameter at point of rupture	do	.144
Reduction in area after rupture, per centum of original section		44.6
Position of rupture		⅜ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.25, ″.42*, ″.19

No. 998.

Marks, $\frac{8\,T_{18}}{B\,T_{5}\,O}$
Diameter, ''.563.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000500	.000167	0.	....	
5, 000	20, 000	.000677	.000167	0.	....	
6, 250	25, 000	.000800	.000133	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
7, 750	31, 000	.001000	.000033	....	....	
8, 000	32, 000	.001033	.000033	....	....	
8, 250	33, 000	.001067	.000034	....	....	
8, 500	34, 000	.001133	.000066	....	....	
8, 750	35, 000	.001167	.000034	.000033	.000033	
9, 000	36, 000	.001200	.000033	....	....	
0, 250	37, 000	.001267	.000067	....	....	Elastic limit.
9, 500	38, 000	.008300	.007033	....	....	
9, 750	39, 000	.009300	.001000	....	....	
10, 000	40, 000	.010400	.001100	.008767	.008734	
10, 250	41, 000	.010833	.000433	....	....	
10, 500	42, 000	.011367	.000534	....	....	
10, 750	43, 000	.012600	.001233	....	....	
11, 000	44, 000	.013767	.001167	....	....	
11, 250	45, 000	.014933	.001166	....	....	
11, 500	46, 000	.016167	.001234	....	....	
11, 750	47, 000	.017400	.001233	....	....	
12, 000	48, 000	.018733	.001333	....	....	
12, 250	49, 000	.020000	.001267	....	....	
12, 500	50, 000	.021100	.001100	....	....	
13, 000	52, 000	.024167	.003067	....	....	
13, 500	54, 000	.027267	.003100	....	....	
14, 000	56, 000	.030767	.003500	....	....	
14, 500	58, 000	.034500	.003733	....	....	
15, 000	60, 000	.039000	.004500	....	....	
15, 500	62, 000	.044500	.005500	....	....	
16, 000	64, 000	.050000	.005500	....	....	
16, 500	66, 000	.058000	.008000	....	....	
17, 000	68, 000	.067667	.009667	....	....	
17, 500	70, 000	.0800	.012333	....	....	
18, 000	72, 000	.1000	.0200	....	....	
18, 500	74, 000	.1400	.0400	....	....	
18, 620	74, 480	.1933	.0533	....	....	Tensile strength.
17, 200	....	....	....	....	....	Load at time of rupture.

General summary.

Tensile strength per square inch of original section ....pounds.. 74, 480
Elastic limit per square inch of original section..do... 37, 000
Elongation per inch after rupture...inch.. 0. 1933
Elongation per inch under strain at elastic limit ....do... .001267
Reduction in diameter at point of rupture...do... .103
Reduction in area after rupture, per centum of original section 33.5
Position of rupture..at middle of stem
Character of broken surface ....granular; radiating from a dull spot at the circumference
Elongation of inch sections ....''.21, ''.37*, ''.19

No. 999.

Marks, $_{\mathrm{B}}{}^{8}\mathrm{T}_{6}{}^{\mathrm{T}_{11}}\mathrm{M}$
Diameter, ″.564.
Sectional area, .25 square inch.

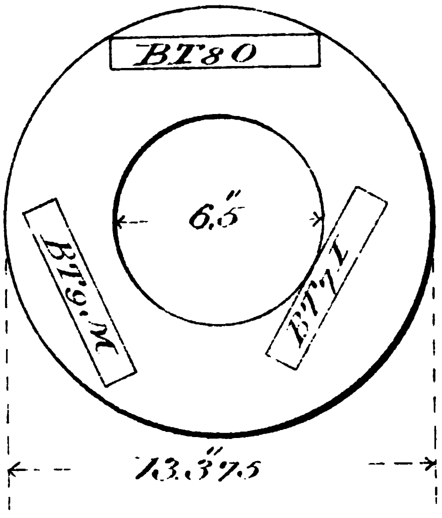
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000233	.000133	0.	....	
3, 750	15, 000	.000400	.000167	0.	....	
5, 000	20, 000	.000567	.000167	0.	....	
6, 250	25, 000	.000733	.000166	0.	....	
7, 500	30, 000	.000900	.000167	0.	....	
7, 750	31, 000	.000900	0.	....	....	
8, 000	32, 000	.000933	.000033	....	....	
8, 250	33, 000	.000967	.000034	....	....	
8, 500	34, 000	.001000	.000033	....	....	Elastic limit.
8, 750	35, 000	.006500	.005500	.005333	.005333	
9, 000	36, 000	.007933	.001433	....	....	
9, 250	37, 000	.008600	.000667	....	....	
9, 500	38, 000	.009767	.001167	....	....	
9, 750	39, 000	.010700	.000933	....	....	
10, 000	40, 000	.011800	.001100	.010333	.005000	
10, 250	41, 000	.012500	.000700	....	....	
10, 500	42, 000	.013600	.001100	....	....	
10, 750	43, 000	.014667	.001067	....	....	
11, 000	44, 000	.016000	.001333	....	....	
11, 250	45, 000	.017167	.001167	....	....	
11, 500	46, 000	.018600	.001433	....	....	
11, 750	47, 000	.020000	.001400	....	....	
12, 000	48, 000	.021167	.001167	....	....	
12, 250	49, 000	.022500	.001333	....	....	
12, 500	50, 000	.024400	.001900	....	....	
13, 000	52, 000	.027333	.002933	....	....	
13, 500	54, 000	.031067	.003734	....	....	
14, 000	56, 000	.035133	.004066	....	....	
14, 500	58, 000	.039500	.004367	....	....	
15, 000	60, 000	.044667	.005167	....	....	
15, 500	62, 000	.050833	.006166	....	....	
16, 000	64, 000	.058333	.007500	....	....	
16, 500	66, 000	.067333	.009000	....	....	
17, 000	68, 000	.0767	.009367	....	....	
17, 500	70, 000	.1000	.0233	....	....	
17, 980	71, 920	.1400	.0400	....	....	Tensile strength.
16, 600	....	....	....	....	....	Load at time of rupture.

General summary.

Tensile strength per square inch of original section	pounds	71, 920
Elastic limit per square inch of original section	do	34, 000
Elongation per inch after rupture	inch	0. 1467
Elongation per inch under strain at elastic limit	do	.001000
Reduction in diameter at point of rupture	do	.064
Reduction in area after rupture, per centum of original section		21. 4
Position of rupture		¾ inch from neck
Character of broken surface		granular; radiating from a blow-hole at the circumference
Elongation of inch sections		″.20*, ″.13, ″.11

Tube No. 78 8" converted Rifle

Additional specimens



No. 2125.

Marks, $\frac{8\,T_{11}}{B\,T,\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	000967	.000167	0.	....	
7, 750	31, 000	.001000	.000033	....	....	Elastic limit.
8, 000	32, 000	.004200	.003200	....	....	
8, 250	33, 000	.005900	.001700	....	....	
8, 500	34, 000	.006900	.001000	....	....	
8, 750	35, 000	.007633	.000733	....	....	
9, 000	36, 000	.008667	.001034	....	....	
9, 250	37, 000	.009500	.000833	....	....	
9, 500	38, 000	.010667	.001167	....	....	
9, 750	39, 000	.011667	.001000	....	....	
10, 000	40, 000	.012733	.001066	....	....	
10, 250	41, 000	.013733	.001000	....	....	
10, 500	42, 000	.015100	.001367	....	....	
10, 750	43, 000	.016167	.001067	....	....	
11, 000	44, 000	.017333	.001166	....	....	
11, 250	45, 000	.018567	.001234	....	....	
11, 500	46, 000	.020000	.001433	....	....	
11, 750	47, 000	.021367	.001367	....	....	
12, 000	48, 000	.022767	.001400	....	....	
12, 250	49, 000	.024333	.001566	....	....	
12, 500	50, 000	.026333	.002000	....	....	
13, 000	52, 000	.030000	.003667	....	....	
13, 500	54, 000.	.033733	.003733	....	....	
14, 000	56, 000	.038067	.004334	....	....	
14, 500	58, 000	.043167	.005100	....	....	
15, 000	60, 000	.049667	.006500	....	....	
15, 500	62, 000	.057333	.007666	....	....	
16, 000	64, 000	.066500	.009167	....	....	
16, 500	66, 000	.078333	.011833	....	....	
17, 000	68, 000	.0967	.018367	....	....	
17, 500	70, 000	.1300	.0333	....	....	
17, 710	70, 840	.1967	.0667	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	70, 840
Elastic limit per square inch of original section..........do...	31, 000
Elongation per inch after rupture..........inch..	0. 2767
Elongation per inch under strain at elastic limit..........do...	.001000
Reduction in diameter at point of rupture..........do ..	.134
Reduction in area after rupture, per centum of original section..........	41. 9
Position of rupture..........	″.55 from middle of stem
Character of broken surface..........	silky; with slight granulation
Elongation of inch sections..........	″.31, ″.35*, ″.17

No. 2126.

Marks, $\genfrac{}{}{0pt}{}{8\,T_{18}}{B\,T_{8}\,O}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	- .000033	— .000033	
2, 500	10, 000	.000200	.000100	— .000033	0.	
3, 750	15, 000	.000433	.000233	— .000033	0.	
5, 000	20, 000	.000567	.000134	— .000033	0.	
6, 250	25, 000	.000767	.000200	— .000033	0.	
7, 500	30, 000	.000900	.000133	— .000033	0.	
7, 750	31, 000	.000933	.000033	....	....	
8, 000	32, 000	.000967	.000034	....	....	
8, 250	33, 000	.001033	.000066	....	....	
8, 500	34, 000	.001100	.000067	....	....	
8, 750	35, 000	.001167	.000067	.000067	.000100	Elastic limit.
9, 000	36, 000	.001200	.000033	....	....	
9, 250	37, 000	.008833	.007633	....	....	
9, 500	38, 000	.009800	.000967	....	....	
9, 750	30, 000	.010500	.000700	....	....	
10, 000	40, 000	.011567	.001067	....	....	
10, 250	41, 000	.012333	.000766	....	....	
10, 500	42, 000	.013500	.001167	....	....	
10, 750	43, 000	.014400	.000900	....	....	
11, 000	44, 000	.015700	.001300	....	....	
11, 250	45, 000	.016900	.001200	....	....	
11, 500	46, 000	.018333	.001433	....	....	
11, 750	47, 000	.019333	.001000	....	....	
12, 000	48, 000	.021033	.001700	....	....	
12, 250	49, 000	.022100	.001067	....	....	
12, 500	50, 000	.023733	.001633	....	....	
13, 000	52, 000	.027500	.003767	....	....	
13, 500	54, 000	.030833	.003333	....	....	
14, 000	56, 000	.034567	.003734	....	....	
14, 500	58, 000	.039167	.004600	....	....	
15, 000	60, 000	.044000	.004833	....	....	
15, 500	62, 000	.050000	.006000	....	....	
16, 000	64, 000	.058333	.008333	....	....	
16, 500	66, 000	.0650	.006667	....	....	
17, 000	68, 000	.0783	.0133	....	....	
17, 500	70, 000	.0967	.0184	....	....	
18, 000	72, 000	.1233	.0266	....	....	
18, 260	73, 040	.1900	.0667	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	73, 040
Elastic limit per square inch of original section	do ..	35, 000
Elongation per inch after rupture	inch..	0. 3100
Elongation per inch under strain at elastic limit	do...	.001167
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		[illegible] inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		".24, ".46*, ".23

No. 2127.

Marks, $\overset{8\ T_{18}}{B\ T, M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.001000	.000200	0.	....	
7, 750	31, 000	.001033	.000033	....	....	
8, 000	32, 000	.001100	.000067	....	....	Elastic limit.
8, 250	33, 000	.002433	.001333	....	....	
8, 500	34, 000	.007067	.004634	....	....	
8, 750	35, 000	.008067	.001000	....	....	
9, 000	36, 000	.009100	.001033	....	....	
9, 250	37, 000	.010000	.000900	....	....	
9, 500	38, 000	.011000	.001000	....	....	
9, 750	39, 000	.011900	.000900	....	....	
10, 000	40, 000	.013000	.001100	....	....	
10, 250	41, 000	.014033	.001033	....	....	
10, 500	42, 000	.015167	.001134	....	....	
10, 750	43, 000	.016167	.001000	....	....	
11, 000	44, 000	.017667	.001500	....	....	
11, 250	45, 000	.018767	.001100	....	....	
11, 500	46, 000	.020100	.001333	....	....	
11, 750	47, 000	.021500	.001400	....	....	
12, 000	48, 000	.023167	.001667	....	....	
12, 250	49, 000	.024667	.001500	....	....	
12, 500	50, 000	.026533	.001866	....	....	
13, 000	52, 000	.029700	.003167	....	....	
13, 500	54, 000	.033733	.004033	....	....	
14, 000	56, 000	.037667	.003934	....	....	
14, 500	58, 000	.043000	.005333	....	....	
15, 000	60, 000	.049000	.006000	....	....	
15, 500	62, 000	.055333	.006333	....	....	
16, 000	64, 000	.064667	.009334	....	....	
16, 500	66, 000	.075000	.010333	....	....	
17, 000	68, 000	.0900	.0150	....	....	
17, 500	70, 000	.1200	.0300	....	....	
17, 700	70, 800	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	70, 800
Elastic limit per square inch of original section	do...	32, 000
Elongation per inch after rupture	inch..	0. 1433
Elongation per inch under strain at elastic limit	do...	.001100
Reduction in diameter at point of rupture	do...	.064
Reduction in area after rupture, per centum of original section		21. 4
Position of rupture		″.40 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.18*, ″.13, ″.12

NEW TUBE NO. 18.

No. 2420.

Marks, $^{8\,T_{18}}_{B\,T_7\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.C00467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001067	.000100	....	....	
9,000	36,000	.001100	.000033	....	....	
9,250	37,000	.001133	.000033	....	....	
9,500	38,000	.001167	.000034	....	....	Elastic limit.
9,750	39,000	.001500*	.000333	....	....	
10,000	40,000	.002667	.001167	....	....	
10,250	41,000	.004067	.001400	....	....	
10,500	42,000	.008333	.004266	....	....	
10,750	43,000	.010333	.002000	....	....	
11,000	44,000	.012000	.001667	....	....	
11,250	45,000	.012467	.000467	....	....	
11,500	46,000	.013067	.000600	....	....	
11,750	47,000	.014367	.001300	....	....	
12,000	48,000	.016100	.001733	....	....	
12,250	49,000	.017500	.001400	....	....	
12,500	50,000	.019133	.001633	....	....	
13,000	52,000	.021933	.002800	....	....	
13,500	54,000	.025833	.003900	....	....	
14,000	56,000	.029333	.003500	....	....	
14,500	58,000	.033567	.004234	....	....	
15,000	60,000	.038667	.005100	....	....	
15,500	62,000	.046333	.007666	....	....	
16,000	64,000	.053333	.007000	....	....	
16,500	66,000	.0633	.009967	....	....	
17,000	68,000	.0733	.0100	....	....	
17,500	70,000	.0900	.0167	....	....	
18,000	72,000	.1233	.0333	....	....	
18,140	72,560	.1667	.0434	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section .... pounds.. 72,560
Elastic limit per square inch of original section .... do... 38,000
Elongation per inch after rupture .... inch.. 0.2567
Elongation per inch under strain at elastic limit .... do... .001167
Reduction in diameter at point of rupture .... do... .144
Reduction in area after rupture, per centum of original section 44.6
Position of rupture .... 1″.20 from neck; oblique
Character of broken surface .... silky; opened cracks in surface of stem
Elongation of inch sections .... ″.15, ″.25, ″.37*

No. 2421.

Marks, $\genfrac{}{}{0pt}{}{8\,T_{18}}{B\,T_{8}\,O}$
Diameter, ''.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	...	
2,500	10,000	.000333	.000166	0.	...	
3,750	15,000	.000500	.000167	0.	...	
5,000	20,000	.000667	.000167	0.	...	
6,250	25,000	.000800	.000133	0.	...	
7,500	30,000	.000967	.000167	0.	...	
8,750	35,000	.001133	.000166	...	...	
9,000	36,000	.001167	.000034	...	...	
9,250	37,000	.001200	.000033	...	...	Elastic limit.
9,500	38,000	.001333	.000133	...	...	
9,750	39,000	.008000	.006667	...	...	
10,000	40,000	.009567	.001567	...	...	
10,250	41,000	.009933	.000366	...	...	
10,500	42,000	.010700	.000767	...	...	
10,750	43,000	.011667	.000967	...	...	
11,000	44,000	.012867	.001200	...	...	
11,250	45,000	.013833	.000966	...	...	
11,500	46,000	.015000	.001167	...	...	
11,750	47,000	.016433	.001433	...	...	
12,000	48,000	.018000	.001567	...	...	
12,250	49,000	.019000	.001000	...	...	
12,500	50,000	.020567	.001567	...	...	
13,000	52,000	.024000	.003433	...	...	
13,500	54,000	.027333	.003333	...	...	
14,000	56,000	.030900	.003567	...	...	
14,500	58,000	.035667	.004767	...	...	
15,000	60,000	.040667	.005000	...	...	
15,500	62,000	.046000	.005333	...	...	
16,000	64,000	.052700	.006700	...	...	
16,500	66,000	.061567	.008867	...	...	
17,000	68,000	.0767	.015133	...	...	
17,500	70,000	.0967	.0200	...	...	
18,000	72,000	.1167	.0200	...	...	
18,280	73,120	.1700	.0533	...	...	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	73,120
Elastic limit per square inch of original section	do	37,000
Elongation per inch after rupture	inch	0.2433
Elongation per inch under strain at elastic limit	do	.001200
Reduction in diameter at point of rupture	do	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		''.65 from neck
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		''.14, ''.18, ''.41*

No. 2422.

Marks, $\overset{8\,T_{18}}{B\,T_{9}\,M}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001067	.000100	....	....	
9,000	36,000	.001100	.000033	....	....	
9,250	37,000	.001133	.000033	....	....	
9,500	38,000	.001167	.000034	....	....	
9,750	39,000	.001267	.000100	....	....	
10,000	40,000	.001367	.000100	....	....	Elastic limit.
10,250	41,000	.005000	.003633	....	....	
10,500	42,000	.007600	.002600	....	....	
10,750	43,000	.008367	.000767	....	....	
11,000	44,000	.009700	.001333	....	....	
11,250	45,000	.010733	.001033	....	....	
11,500	46,000	.011867	.001134	....	....	
11,750	47,000	.013000	.001133	....	....	
12,000	48,000	.014333	.001333	....	....	
12,250	49,000	.015667	.001334	....	....	
12,500	50,000	.016800	.001133	....	....	
13,000	52,000	.019833	.003033	....	....	
13,500	54,000	.022667	.002834	....	....	
14,000	56,000	.026000	.003233	....	....	
14,500	58,000	.030000	.004000	....	....	
15,000	60,000	.034000	.004000	....	....	
15,500	62,000	.039000	.005000	....	....	
16,000	64,000	.045500	.006500	....	....	
16,500	66,000	.051000	.005500	....	....	
17,000	68,000	.059667	.008667	....	....	
17,500	70,000	.0700	.010333	....	....	
18,000	72,000	.0900	.0200	....	....	
18,500	74,000	.1167	.0267	....	....	
18,750	75,000	.1700	.0533	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	75,000
Elastic limit per square inch of original section	do...	40,000
Elongation per inch after rupture	inch..	0.2400
Elongation per inch under strain at elastic limit	do...	.001367
Reduction in diameter at point of rupture	do...	.135
Reduction in area after rupture, per centum of original section		41.9
Position of rupture		1″.10 from neck
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		″.33*, ″.26, ″.13

No. 2423.

Marks, $\overset{8}{M}\,\overset{T_{18}}{T_4}\,I$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000533	.000200	0.	....	
5, 000	20, 000	.000700	.000167	0.	....	
6, 250	25, 000	.000833	.000133	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
8, 750	35, 000	.001133	.000133	....	....	
9, 000	36, 000	.001167	.000034	....	....	
9, 250	37, 000	.001200	.000033	....	....	
9, 500	38, 000	.001233	.000033	....	....	Elastic limit.
9, 750	39, 000	.001400	.000167	....	....	
10, 000	40, 000	.003333	.001933	....	....	
10, 250	41, 000	.005133	.001800	....	....	
10, 500	42, 000	.007500	.001367	....	....	
10, 750	43, 000	.009067	.001567	....	....	
11, 000	44, 000	.010400	.001533	....	....	
11, 250	45, 000	.011433	.001033	....	....	
11, 500	46, 000	.012433	.001000	....	....	
11, 750	47, 000	.013733	.001300	....	....	
12, 000	48, 000	.015000	.001267	....	....	
12, 250	49, 000	.016233	.001233	....	....	
12, 500	50, 000	.017700	.001467	....	....	
13, 000	52, 000	.020300	.002800	....	....	
13, 500	54, 000	.023333	.002833	....	....	
14, 000	56, 000	.027500	.004167	....	....	
14, 500	58, 000	.032000	.004500	....	....	
15, 000	60, 000	.036000	.004000	....	....	
15, 500	62, 000	.041167	.005167	....	....	
16, 000	64, 000	.046000	.004833	....	....	
16, 500	66, 000	.053333	.007333	....	....	
17, 500	68, 000	.062667	.009334	....	....	
17, 500	70, 000	.0767	.014033	....	....	
18, 000	72, 000	.0933	.0166	....	....	
18, 460	73, 840	.1467	.0534	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	73, 840
Elastic limit per square inch of original section	do	38, 000
Elongation per inch after rupture	inch	0. 1600
Elongation per inch under strain at elastic limit	do	.001233
Reduction in diameter at point of rupture	do	.065
Reduction in area after rupture, per centum of original section		21. 4
Position of rupture		1 inch from neck

Character of broken surface, granular; flaky spot at circumference; opened small cracks in surface of stem.

Elongation of inch sections........″.10, ″.13, ″.25*

No. 2424.

Marks, $\overset{8}{M}\,\overset{T_{18}}{T_6}\,O$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000833	.000166	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001167	.000167	....	....	
9,000	36,000	.001200	.000033	....	....	
9,250	37,000	.001233	.000033	....	....	
9,500	38,000	.001267	.000034	....	....	
9,750	39,000	.001300	.000033	....	....	
10,000	40,000	.001333	.000033	....	....	
10,250	41,000	.001367	.000034	....	....	Elastic limit.
10,500	42,000	.004500	.003133	....	....	
10,750	43,000	.008267	.003767	....	....	
11,000	44,000	.009000	.000733	....	....	
11,250	45,000	.010000	.001000	....	....	
11,500	46,000	.011067	.001067	....	....	
11,750	47,000	.012133	.001066	....	....	
12,000	48,000	.013333	.001200	....	....	
12,250	49,000	.014333	.001000	....	....	
12,500	50,000	.015667	.001334	....	....	
13,000	52,000	.018667	.003000	....	....	
13,500	54,000	.021067	.002400	....	....	
14,000	56,000	.024000	.002933	....	....	
14,500	58,000	.027667	.003667	....	....	
15,000	60,000	.031367	.003700	....	....	
15,500	62,000	.035167	.003800	....	....	
16,000	64,000	.039667	.004500	....	....	
16,500	66,000	.045000	.005333	....	....	
17,000	68,000	.052500	.007500	....	....	
17,500	70,000	.060000	.007500	....	....	
18,000	72,000	.0700	.0100	....	....	
18,500	74,000	.0900	.0200	....	....	
19,000	76,000	.1167	.0267	....	....	
19,090	76,360	.1400	.0233	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76,360
Elastic limit per square inch of original section	do...	41,000
Elongation per inch after rupture	inch..	0.1767
Elongation per inch under strain at elastic limit	do...	.001367
Reduction in diameter at point of rupture	do...	.064
Reduction in area after rupture, per centum of original section		21.4
Position of rupture		".33 from neck
Character of broken surface..granular; dull spot at circumference; opened cracks in surface of stem		
Diameter ½ inch from point of rupture		".49

No. 2425.

Marks, $\overset{8\,T_{18}}{M\,T_{6}\,M}$
Diameter, ″.565.
Sectional area, .20 square inch.

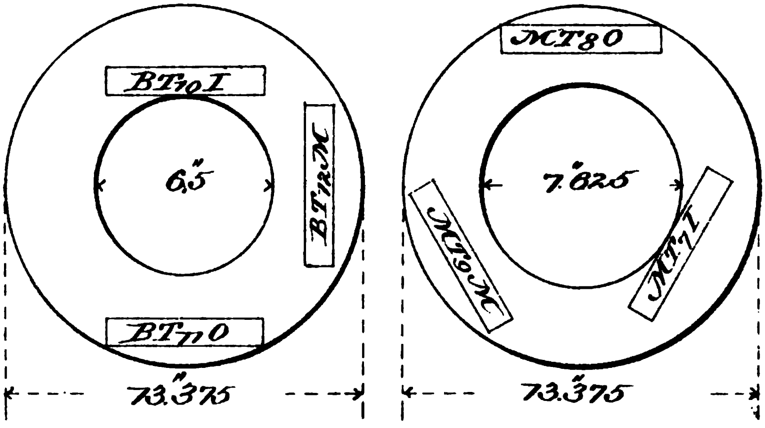
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000233	.000133	0.	....	
3, 750	15, 000	.000367	.000134	0.	....	
5, 000	20, 000	.000500	.000133	0.	....	
6, 250	25, 000	.000633	.000133	0.	....	
7, 500	30, 000	.000833	.000200	0.	....	
8, 750	35, 000	.001100	.000267	....	....	
9, 000	36, 000	.001133	.000033	....	....	Elastic limit.
9, 250	87, 000	.007900	.006767	....	....	
9, 500	38, 000	.008933	.001033	....	....	
9, 750	39, 000	.009667	.000734	....	....	
10, 000	40, 000	.010667	.001000	....	....	
10, 500	42, 000	.013033	.002366	....	....	
11, 000	44, 000	.014000	.000967	....	....	
11, 500	46, 000	.017667	.003667	....	....	
12, 000	48, 000	.021033	.003366	....	....	
12, 500	50, 000	.023300	.002267	....	....	
13, 000	52, 000	.026500	.003200	....	....	
13, 500	54, 000	.030000	.003500	....	....	
14, 000	56, 000	.034000	.004000	....	....	
14, 500	58, 000	.038667	.004667	....	....	
15, 000	60, 000	.043333	.004066	....	....	
15, 500	62, 000	.049333	.006000	....	....	
16, 000	64, 000	.055667	.006334	....	....	
16, 500	66, 000	.0667	.011033	....	....	
17, 000	68, 000	.0733	.0066	....	....	
17, 500	70, 000	.0967	.0234	....	....	
18, 000	72, 000	.1267	.0300	....	....	
18, 150	72, 600	.1667	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	72, 600
Elastic limit per square inch of original section	do...	36, 000
Elongation per inch after rupture	inch..	0. 1967
Elongation per inch under strain at elastic limit	do...	.001133
Reduction in diameter at point of rupture	do...	.084
Reduction in area after rupture, per centum of original section		27. 6
Position of rupture		1″.55 from neck
Character of broken surface		granular, 40 per centum; silky, oblique, 60 per centum
Elongation of inch sections		″.12, ″.29*, ″.18

New Tube No. 78 8" converted Rifle

Additional specimens



H Ex 31 49 2

No. 2630.

Marks, $\substack{8\,\mathrm{Cn}\,\mathrm{R}_{18}\,\mathrm{T} \\ \mathrm{B}\,\mathrm{T}_{10}\,\mathrm{I}}$
Diameter, ''.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100			
2, 500	10, 000	.000233	.000133			
3, 750	15, 000	.000400	.000167			
5, 000	20, 000	.000567	.000167			
6, 250	25, 000	.000733	.000166			
7, 500	30, 000	.000933	.000200			
8, 750	35, 000	.001100	.000167			
10, 000	40, 000	.001333	.000233			
10, 250	41, 000	.001367	.000034			Elastic limit.
10, 500	42, 000	.002867	.001500			
10, 750	43, 000	.004200	.001333			
11, 000	44, 000	.006200	.002000			
11, 250	45, 000	.007400	.001200			
11, 500	46, 000	.009000	.001600			
12, 000	48, 000	.011100	.002100			
12, 500	50, 000	.013333	.002233			
13, 000	52, 000	.016033	.002700			
13, 500	54, 000	.018667	.002634			
14, 000	56, 000	.021833	.003166			
14, 500	58, 000	.024833	.003000			
15, 000	60, 000	.028067	.003234			
15, 500	62, 000	.032333	.004266			
16, 000	64, 000	.036333	.004000			
16, 500	66, 000	.0433	.006967			
17, 000	68, 000	.0467	.0034			
17, 500	70, 000	.0567	.0100			
18, 000	72, 000	.0667	.0100			
18, 500	74, 000	.0800	.0133			
19, 000	76, 000	.1100	.0300			
19, 110	76, 440	.1467	.0367			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76, 440
Elastic limit per square inch of original section	do...	41, 000
Elongation per inch after rupture	inch..	0. 2033
Elongation per inch under strain at elastic limit	do...	.001367
Reduction in diameter at point of rupture	do...	.114
Reduction in area after rupture, per centum of original section		36. 4
Position of rupture		1''.35 from neck
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		''.23, ''.28*, ''.10

No. 2631.

Marks, $^{8}\frac{\text{Cn R}_{18}\text{ T}}{\text{B T}_{11}\text{ O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001067	.000134	....	....	
10, 000	40, 000	.001300	.000233	....	....	
10, 250	41, 000	.001333	.000033	....	....	
10, 500	42, 000	.001400	.000067	....	....	
10, 750	43, 000	.001433	.000033	....	....	
11, 000	44, 000	.001500	.000067	....	....	Elastic limit.
11, 250	45, 000	.002067	.000567	....	....	
11, 500	46, 000	.004067	.002000	....	....	
11, 750	47, 000	.005000	.000933	....	....	
12, 000	48, 000	.006167	.001167	....	....	
12, 500	50, 000	.008100	.001933	....	....	
13, 000	52, 000	.010200	.002100	....	....	
13, 500	54, 000	.012333	.002133	....	....	
14, 000	56, 000	.014467	.002134	....	....	
14, 500	58, 000	.016900	.002433	....	....	
15, 000	60, 000	.019067	.002767	....	....	
15, 500	62, 000	.022333	.002666	....	....	
16, 000	64, 000	.025667	.003334	....	....	
16, 500	66, 000	.028333	.002666	....	....	
17, 000	68, 000	.031667	.003334	....	....	
17, 500	70, 000	.036000	.004333	....	....	
18, 000	72, 000	.0433	.0073	....	....	
18, 500	74, 000	.0467	.0034	....	....	
19, 000	76, 000	.0567	.0100	....	....	
19, 500	78, 000	.0667	.0100	....	....	
20, 000	80, 000	.0733	.0066	....	....	
20, 500	82, 000	.0967	.0234	....	....	
20, 710	82, 840	.1333	.0366	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	82, 840
Elastic limit per square inch of original section	do...	44, 000
Elongation per inch after rupture	inch..	0. 2067
Elongation per inch under strain at elastic limit	do...	.001500
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44. 6
Position of rupture		at middle of stem.
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		″.12, ″.37*, ″.13

No. 2632.

Marks, $^{8\,\mathrm{Cn}\,\mathrm{B}_{18}\,\mathrm{T}}_{\mathrm{B}\,\mathrm{T}_{12}\,\mathrm{M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.		
2, 500	10, 000	.000233	.000133	0.		
3, 750	15, 000	.000367	.000134	0.		
5, 000	20, 000	.000533	.000166	0.		
6, 250	25, 000	.000700	.000167	0.		
7, 500	30, 000	.000867	.000167	0.		
8, 750	35, 000	.001100	.000233			
9, 000	36, 000	.001133	.000033			
9, 250	37, 000	.001200	.000067			
9, 500	38, 000	.001267	.000067			
9, 750	39, 000	.001267	0.			
10, 000	40, 000	.001300	.000033			
10, 250	41, 000	.001333	.000033			
10, 500	42, 000	.001367	.000034			Elastic limit.
10, 750	43, 000	.001733	.000366			
11, 000	44, 000	.005767	.004034			
11, 250	45, 000	.006333	.000566			
11, 500	46, 000	.007533	.001200			
12, 000	48, 000	.009333	.001800			
12, 500	50, 000	.011500	.002167			
13, 000	52, 000	.014667	.003167			
13, 500	54, 000	.016667	.002000			
14, 000	56, 000	.019367	.002700			
14, 500	58, 000	.022267	.002900			
15, 000	60, 000	.025067	.002800			
15, 500	62, 000	.029000	.003933			
16, 000	64, 000	.034667	.005667			
16, 500	66, 000	.0400	.005333			
17, 000	68, 000	.0433	.0033			
17, 500	70, 000	.0500	.0067			
18, 000	72, 000	.0567	.0067			
18, 500	74, 000	.0667	.0100			
19, 000	76, 000	.0800	.0133			
19, 500	78, 000	.1033	.0233			
19, 700	78, 800	.1433	.0400			Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	78, 800
Elastic limit per square inch of original section..................do...	42, 000
Elongation per inch after rupture ....inch..	0. 2033
Elongation per inch under strain at elastic limit ....do...	. 001367
Reduction in diameter at point of rupture..................do...	. 134
Reduction in area after rupture, per centum of original section..................	41. 9
Position of rupture..................	1″.60 from neck
Character of broken surface	silky; opened cracks in surface of stem
Elongation of inch sections..................	″.15, ″.35*, ″.11

No. 2633.

Marks, $\overset{8\ \mathrm{Cn\ R_{18}\ T}}{\mathrm{M\ T_7\ I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	....	....	
10,000	40,000	.001300	.000200	....	....	
10,250	41,000	.001333	.000033	....	....	
10,500	42,000	.001400	.000067	....	....	
10,750	43,000	.001433	.000033	....	....	
11,000	44,000	.001500	.000067	....	....	Elastic limit.
11,250	45,000	.002000	.000500	....	....	
11,500	46,000	.002800	.000800	....	....	
11,750	47,000	.003533	.000733	....	....	
12,000	48,000	.004700	.001167	....	....	
12,250	49,000	.005567	.000867	....	....	
12,500	50,000	.007067	.001500	....	....	
13,000	52,000	.009933	.002866	....	....	
13,500	54,000	.012267	.002334	....	....	
14,000	56,000	.014267	.002000	....	....	
14,500	58,000	.016000	.001733	....	....	
15,000	60,000	.019900	.003900	....	....	
15,500	62,000	.022500	.002600	....	....	
16,000	64,000	.025333	.002833	....	....	
16,500	66,000	.028733	.003400	....	....	
17,000	68,000	.032000	.003267	....	....	
17,500	70,000	.036500	.004500	....	....	
18,000	72,000	.041667	.005167	....	....	
18,500	74,000	.0533	.011633	....	....	
19,000	76,000	.0600	.0067	....	....	
19,500	78,000	.0733	.0133	....	....	
20,000	80,000	.0933	.0200	....	....	
20,200	80,800	.1133	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80,800
Elastic limit per square inch of original section	do...	44,000
Elongation per inch after rupture	inch..	0.1367
Elongation per inch under strain at elastic limit	do...	.001500
Reduction in diameter at point of rupture	do...	.094
Reduction in area after rupture, per centum of original section		30.6
Position of rupture		[illegible] inch from neck
Character of broken surface		granular; flaky spot at circumference
Elongation of inch sections		″.07, ″.12, ″.22*

No. 2634.

Marks, $^{8\,\mathrm{Cn\,R_{18}\,T}}_{\mathrm{M\,T_8\,O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000267	.000134	0.	....	
3, 750	15, 000	.000467	.000200	0.	....	
5, 000	20, 000	.000667	.000200	0.	....	
6, 250	25, 000	.000833	.000166	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
8, 750	35, 000	.001200	.000200	....	....	
10, 000	40, 000	.001333	.000133	....	....	
10, 250	41, 000	.001400	.000167	....	....	Elastic limit.
10, 500	42, 000	.001500	.000100	....	....	
10, 750	43, 000	.001600	.000100	....	....	
11, 000	44, 000	.001833	.000233	....	....	
11, 250	45, 000	.002267	.000434	....	....	
11, 500	46, 000	.003933	.001666	....	....	
11, 750	47, 000	.004467	.000534	....	....	
12, 000	48, 000	.005667	.001200	....	....	
12, 250	49, 000	.006700	.001033	....	....	
12, 500	50, 000	.008000	.001300	....	....	
13, 000	52, 000	.010167	.002167	....	....	
13, 500	54, 000	.012700	.002533	....	....	
14, 000	56, 000	.014567	.001867	....	....	
14, 500	58, 000	.017233	.002666	....	....	
15, 000	60, 000	.019533	.002300	....	....	
15, 500	62, 000	.022067	.002534	....	....	
16, 000	64, 000	.024867	.002800	....	....	
16, 500	66, 000	.028200	.003333	....	....	
17, 000	68, 000	.032167	.003967	....	....	
17, 500	70, 000	.036000	.003833	....	....	
18, 000	72, 000	.040400	.004400	....	....	
18, 500	74, 000	.0433	.0029	....	....	
19, 000	76, 000	.0533	.0100	....	....	
19, 500	78, 000	.0633	.0100	....	....	
20, 000	80, 000	.0733	.0100	....	....	
20, 500	82, 000	.0967	.0234	....	....	
20, 700	82, 800	.1400	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	82, 800
Elastic limit per square inch of original section	do...	41, 000
Elongation per inch after rupture	inch..	0. 1700
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.094
Reduction in area after rupture, per centum of original section		30. 6
Position of rupture		1 inch from neck
Character of broken surface		granular, 70 per centum; dull silky, 30 per centum
Elongation of inch sections		″.10″.18, ″.23*

No. 2635.

Marks, $^{8\,\mathrm{Cn}\,\mathrm{R},\,\mathrm{T}}_{\mathrm{M}\,\mathrm{T},\,\mathrm{M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

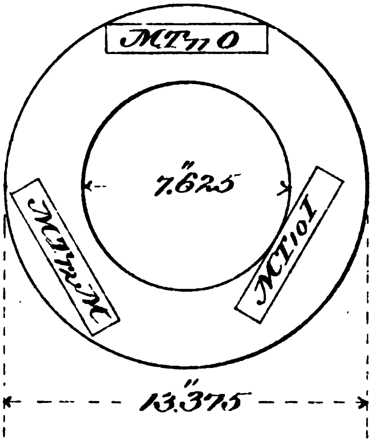
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000300	.000200	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000767	.000134	0.	....	
7, 500	30, 000	.000967	.000200	0.	....	
8, 750	35, 000	.001133	.000166	....	....	
9, 000	36, 000	.001167	.000034	....	....	
9, 250	37, 000	.001200	.000033	....	....	
9, 500	38, 000	.001267	.000067	....	....	
9, 750	39, 000	.001333	.000066	....	....	Elastic limit.
10, 000	40, 000	.002333	.001000	....	....	
10, 250	41, 000	.003200	.000867	....	....	
10, 500	42, 000	.004667	.001467	....	....	
10, 750	43, 000	.005867	.001200	....	....	
11, 000	44, 000	.007067	.001200	....	....	
11, 250	45, 000	.008067	.001000	....	....	
11, 500	46, 000	.009333	.001266	....	....	
12, 000	48, 000	.011733	.002400	....	....	
12, 500	50, 000	.013900	.002167	....	....	
13, 000	52, 000	.016567	.002667	....	....	
13, 500	54, 000	.019333	.002766	....	....	
14, 000	56, 000	.022333	.003000	....	....	
14, 500	58, 000	.025333	.003000	....	....	
15, 000	60, 000	.028667	.003334	....	....	
15, 500	62, 000	.032500	.003833	....	....	
16, 000	64, 000	.036667	.004167	....	....	
16, 500	66, 000	.042000	.005333	....	....	
17, 000	68, 000	.0500	.0080	....	....	
17, 500	70, 000	.0567	.0067	....	....	
18, 000	72, 000	.0667	.0100	....	....	
18, 500	74, 000	.0800	.0133	....	....	
19, 000	76, 000	.1267	.0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76, 000
Elastic limit per square inch of original section	do...	39, 000
Elongation per inch after rupture	inch..	0. 1933
Elongation per inch under strain at elastic limit	do...	.001333
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44. 6
Position of rupture		1″.25 from neck
Character of broken surface		silky
Elongation of inch sections		″.07, ″.19, ″.32*

New Tube No. 18 8" converted Rifle

Additional specimens



H Ex 31 49 2

No. 2689.

Marks, $^{8\,\mathrm{Cn}\,\mathrm{R}_{18}\,\mathrm{T}}_{\mathrm{M}\,\mathrm{T}_{10}\,\mathrm{I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000500	.000167	0.	....	
5, 000	20, 000	.000700	.000200	0.	....	
6, 250	25, 000	.000867	.000167	0.	....	
7, 500	30, 000	.001033	.000166	0.	....	
8, 750	35, 000	.001267	.000234	....	....	
9, 000	36, 000	.001300	.000033	....	....	
9, 250	37, 000	.001333	.000033	....	....	
9, 500	38, 000	.001367	.000034	....	....	
9, 750	39, 000	.001400	.000033	....	....	
10, 000	40, 000	.001433	.000033	....	....	
10, 250	41, 000	.001467	.000034	....	....	
10, 500	42, 000	.001533	.000066	....	....	
10, 750	43, 000	.001600	.000067	....	....	Elastic limit.
11, 000	44, 000	.001900	.000300	....	....	
11, 250	45, 000	.002332	.000433	....	....	
11, 500	46, 000	.002667	.000334	....	....	
11, 750	47, 000	.004500	.001833	....	....	
12, 000	48, 000	.006333	.001833	....	....	
12, 250	49, 000	.007400	.001067	....	....	
12, 500	50, 000	.008700	.001300	....	....	
13, 000	52, 000	.010667	.001967	....	....	
13, 500	54, 000	.013000	.002333	....	....	
14, 000	56, 000	.015167	.002167	....	....	
14, 500	58, 000	.017867	.002700	....	....	
15, 000	60, 000	.020233	.002366	....	....	
15, 500	62, 000	.022500	.002267	....	....	
16, 000	64, 000	.026000	.003500	....	....	
16, 500	66, 000	.029833	.003833	....	....	
17, 000	68, 000	.033000	.003167	....	....	
17, 500	70, 000	.037333	.004333	....	....	
18, 000	72, 000	.0400	.002667	....	....	
18, 500	74, 000	.0433	.0033	....	....	
19, 000	76, 000	.0500	.0067	....	....	
19, 500	78, 000	.0700	.0200	....	....	
20, 000	80, 000	.0900	.0200	....	....	
20, 480	81, 920	.1333	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	81, 920
Elastic limit per square inch of original section	do...	43, 000
Elongation per inch after rupture	inch..	0. 1400
Elongation per inch under strain at elastic limit	do...	.001600
Reduction in diameter at point of rupture	do...	.074
Reduction in area after rupture, per centum of original section		24. 6
Position of rupture		″.35 from neck
Character of broken surface		granular, with flaky spot
Elongation of inch sections		″.11, ″.11, ″.20*

No. 2690.

Marks, $\begin{matrix}8\,\mathrm{Cn}\,\mathrm{R}_{18}\,\mathrm{T} \\ \mathrm{M}\,\mathrm{T}_{11}\,\mathrm{O}\end{matrix}$
Diameter, ″.564.
Sectional area, 25 .square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001200	.000233	....	....	
9, 000	36, 000	.001233	.000033	....	....	
9, 250	37, 000	.001233	0.	....	....	
9, 500	38, 000	.001267	.000034	....	....	
9, 750	39, 000	.001300	.000033	....	....	
10, 000	40, 000	.001333	.000033	....	....	
10, 250	41, 000	.001367	.000034	....	....	
10, 500	42, 000	.001400	.000033	....	....	
10, 750	43, 000	.001500	.000100	....	....	
11, 000	44, 000	.001600	.000100	....	....	Elastic limit.
11, 250	45, 000	.002933	.001333	....	....	
11, 500	46, 000	.004833	.001900	....	....	
11, 750	47, 000	.005600	.000767	....	....	
12, 000	48, 000	.006767	.001167	....	....	
12, 250	49, 000	.007667	.000900	....	....	
12, 500	50, 000	.008833	.001166	....	....	
13, 000	52, 000	.010833	.002000	....	....	
13, 500	54, 000	.013167	.002334	....	....	
14, 000	56, 000	.015333	.002166	....	....	
14, 500	58, 000	.018000	.002667	....	....	
15, 000	60, 000	.020400	.002400	....	....	
15, 500	62, 000	.023233	.002833	....	....	
16, 000	64, 000	.026000	.002767	....	....	
16, 500	66, 000	.029533	.003533	....	....	
17, 000	68, 000	.033167	.003634	....	....	
17, 500	70, 000	.037333	.004166	....	....	
18, 000	72, 000	.041933	.004600	....	....	
18, 500	74, 000	.0500	.008067	....	....	
19, 000	76, 000	.0567	.0067	....	....	
19, 500	78, 000	.0700	.0133	....	....	
20, 000	80, 000	.0833	.0133	....	....	
20, 500	82, 000	.1200	.0367	....	....	
20, 560	82, 240	.1433	.0233	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................pounds.. 82, 240
Elastic limit per square inch of original section....................do... 44, 000
Elongation per inch after rupture....................inch.. 0. 2067
Elongation per inch under strain at elastic limit....................do... .001600
Reduction in diameter at point of rupture....................do... .144
Reduction in area after rupture, per centum of original section.................... 44. 6
Position of rupture.................... ″.05 from middle of stem
Character of broken surface....................silky; opened cracks in surface of stem
Elongation of inch sections....................″.13, ″.85*, ″.14

No. 2691.

Marks, $^{8\ C_{8}\ R_{18}\ T}_{M\ T_{12}\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

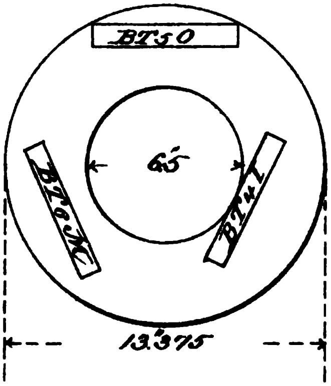
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000667	.000200	0.	....	
6,250	25,000	.000833	.000166	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001167	.000167	....	....	
9,000	36,000	.001233	.000066	....	....	
9,250	37,000	.001267	.000034	....	....	
9,500	38,000	.001300	.000033	....	....	
9,750	39,000	.001333	.000033	....	....	
10,000	40,000	.001400	.000067	....	....	Elastic limit.
10,250	41,000	.001600	.000200	....	....	
10,500	42,000	.002600	.001000	....	....	
10,750	43,000	.003667	.001067	....	....	
11,000	44,000	.005233	.001566	....	....	
11,250	45,000	.006533	.001300	....	....	
11,500	46,000	.007667	.001134	....	....	
11,750	47,000	.008667	.001000	....	....	
12,000	48,000	.009567	.000900	....	....	
12,250	49,000	.010767	.001200	....	....	
12,500	50,000	.011800	.001033	....	....	
13,000	52,000	.013900	.002100	....	....	
13,500	54,000	.016533	.002633	....	....	
14,000	56,000	.019000	.002467	....	....	
14,500	58,000	.021767	.002767	....	....	
15,000	60,000	.025000	.003233	....	....	
15,500	62,000	.028167	.003167	....	....	
16,000	64,000	.031800	.003633	....	....	
16,500	66,000	.036167	.004367	....	....	
17,000	68,000	.040667	.004500	....	....	
17,500	70,000	.0500	.009333	....	....	
18,000	72,000	.0567	.0067	....	....	
18,500	74,000	.0667	.0100	....	....	
19,000	76,000	.0800	.0133	....	....	
19,460	77,840	.1233	.0433	....	....	Tensile strength.

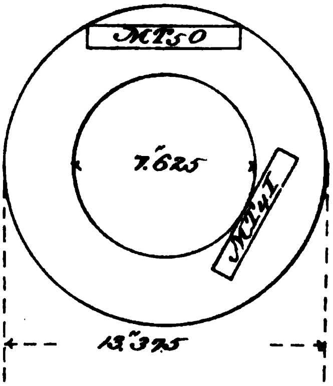
General summary.

Tensile strength per square inch of original section	pounds..	77,840
Elastic limit per square inch of original section	do...	40,000
Elongation per inch after rupture	inch..	0.1867
Elongation per inch under strain at elastic limit	do...	001400
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		″.70 from neck
Character of broken surface		silky
Elongation of inch sections		″.07, ″.10, ″.39

Tube No. 79 8" converted Rifle

Additional specimens





No. 2170.

Marks, $^{8\,T_{1}9}_{B\,T_{4}\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000200	.000100	0.	....	
3, 750	15, 000	.000367	.000167	0.	....	
5, 000	20, 000	.000533	.000166	0.	....	
6, 250	25, 000	.000700	.000167	0.	....	
7, 500	30, 000	.000867	.000167	0.	....	
8, 750	35, 000	.001033	.000166	0.	....	Elastic limit.
9, 000	36, 000	.001933	.000900	....	....	
9, 250	37, 000	.002300	.000367	....	....	
9, 500	38, 000	.003267	.000967	....	....	
9, 750	39, 000	.005133	.001866	....	....	
10, 000	40, 000	.006333	.001200	....	....	
10, 250	41, 000	.007067	.000734	....	....	
10, 500	42, 000	.008400	.001333	....	....	
10, 750	43, 000	.009367	.000967	....	....	
11, 000	44, 000	.010400	.001033	....	....	
11, 250	45, 000	.011433	.001033	....	....	
11, 500	46, 000	.012667	.001234	....	....	
11, 750	47, 000	.013733	.001066	....	....	
12, 000	48, 000	.015000	.001267	....	....	
12, 250	49, 000	.016367	.001367	....	....	
12, 500	50, 000	.017667	.001300	....	....	
13, 000	52, 000	.020400	.002733	....	....	
13, 500	54, 000	.023700	.003300	....	....	
14, 000	56, 000	.027333	.003633	....	....	
14, 500	58, 000	.031333	.004000	....	....	
15, 000	60, 000	.035833	.004500	....	....	
15, 500	62, 000	.041000	.005167	....	....	
16, 000	64, 000	.046667	.005667	....	....	
16, 500	66, 000	.054000	.007333	....	....	
17, 000	68, 000	.062667	.008667	....	....	
17, 500	70, 000	.074500	.011833	....	....	
18, 000	72, 000	.0933	.0188	....	....	
18, 500	74, 000	.1400	.0467	....	....	
18, 510	74, 040	.1567	.0167	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section .... pounds.. 74, 040
Elastic limit per square inch of original section .... do .. 35, 000
Elongation per inch after rupture .... inch.. 0. 2067
Elongation per inch under strain at elastic limit .... do... .001033
Reduction in diameter at point of rupture .... do... .124
Reduction in area after rupture, per centum of original section 39. 2
Position of rupture .... ½ inch from middle of stem
Character of broken surface .... silky
Elongation of inch sections ....″.28*, ″.22, ″.12

No. 2171.

Marks, $\substack{8\,T_{19} \\ B\,T_5\,O}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0		
2,500	10,000	.000300	.000167	0		
3,750	15,000	.000433	.000138	0	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001067	.000134	0.	....	
9,000	36,000	.001133	.000066	....	....	
9,250	37,000	.001167	.000034	....	....	
9,500	38,000	.001200	.000033	....	....	
9,750	39,000	.001267	.000067	....	....	Elastic limit.
10,000	40,000	.001400	.000133	.000133	.000133	
10,250	41,000	.001500	.000100	....	....	
10,500	42,000	.005133	.003633	....	....	
10,750	43,000	.005867	.000734	....	....	
11,000	44,000	.006767	.000900	....	....	
11,250	45,000	.007800	.001033	....	....	
11,500	46,000	.008733	.000933	....	....	
11,750	47,000	.010000	.001267	....	....	
12,000	48,000	.010800	.000800	....	....	
12,250	49,000	.011800	.001000	....	....	
12,500	50,000	.013033	.001233	....	....	
12,750	51,000	.014167	.001134	....	....	
13,000	52,000	.015333	.001166	....	....	
13,250	53,000	.016667	.001334	....	....	
13,500	54,000	.017733	.001066	....	....	
13,750	55,000	.018833	.001100	....	....	
14,000	56,000	.020400	.001567	....	....	
14,250	57,000	.021667	.001267	....	....	
14,500	58,000	.023333	.001666	....	....	
14,750	59,000	.024667	.001334	....	....	
15,000	60,000	.026333	.001666	....	....	
15,500	62,000	.030000	.003667	....	....	
16,000	64,000	.034333	.004333	....	....	
16,500	66,000	.038333	.004000	....	....	
17,000	68,000	.043433	.005100	....	....	
17,500	70,000	.049867	.006434	....	....	
18,000	72,000	.056667	.006800	....	....	
18,500	74,000	.0667	.010033	....	....	
19,000	76,000	.0833	.0166	....	....	
19,500	78,000	.1067	.0234	....	....	
19,700	78,800	.1633	.0566	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 78,800
Elastic limit per square inch of original section..do... 39,000
Elongation per inch after rupture..inch.. 0.2267
Elongation per inch under strain at elastic limit ....do... .001267
Reduction in diameter at point of rupture ....do... .155
Reduction in area after rupture, per centum of original section 47.2
Position of rupture ....1 inch from neck
Character of broken surface...silky
Elongation of inch sections...″.35*, ″.21, ″.12

No. 2172.

Marks, $\overset{8\,T_{19}}{B\,T_{6}\,M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	Elastic limit.
9,000	36,000	.001233	.000100	....	....	
9,250	37,000	.001367	.000134	....	....	
9,500	38,000	.002500	.001133	....	....	
9,750	39,000	.004500	.002000	....	....	
10,000	40,000	.005400	.000900	....	....	
10,250	41,000	.006167	.000767	....	....	
10,500	42,000	.007233	.001066	....	....	
10,750	43,000	.008000	.000767	....	....	
11,000	44,000	.008933	.000933	....	....	
11,250	45,000	.009867	.000934	....	....	
11,500	46,000	.011067	.001200	....	....	
11,750	47,000	.012100	.001033	....	....	
12,000	48,000	.013567	.001467	....	....	
12,250	49,000	.014767	.001200	....	....	
12,500	50,000	.016000	.001233	....	....	
13,000	52,000	.018333	.002333	....	....	
13,500	54,000	.021000	.002667	....	....	
14,000	56,000	.024333	.003333	....	....	
14,500	58,000	.027333	.003000	....	....	
15,000	60,000	.030667	.003334	....	....	
15,500	62,000	.035000	.004333	....	....	
16,000	64,000	.040000	.005000	....	....	
16,500	66,000	.045333	.005333	....	....	
17,000	68,000	.052333	.007000	....	....	
17,500	70,000	.061000	.008667	....	....	
18,000	72,000	.072167	.011167	....	....	
18,500	74,000	.0933	.021133	....	....	
19,000	76,000	.1267	.0334	....	....	
19,120	76,480	.1700	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	76,480
Elastic limit per square inch of original section ....do...	35,000
Elongation per inch after rupture....inch..	0.2133
Elongation per inch under strain at elastic limit ....do...	.001133
Reduction in diameter at point of rupture....do...	.114
Reduction in area after rupture, per centum of original section....	36.4
Position of rupture	″.60 from middle of stem
Character of broken surface....	silky
Elongation of inch sections....	″.23*, ″.27*, ″.14

No. 2173.

Marks, $\overset{8}{\mathrm{M}}\,\overset{\mathrm{T}_{19}}{\mathrm{T}_4}\,\mathrm{I}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.001033	.000233	.000033	.000033	
8,750	35,000	.001167	.000134	.000033	0.	
9,000	36,000	.001167	0.	....	....	
9,250	37,000	.001200	.000033	....	....	
9,500	38,000	.001233	.000033	....	....	
9,750	39,000	.001267	.000034	....	....	
10,000	40,000	.001333	.000066	.000033	0.	
10,250	41,000	.001367	.000034	....	....	
10,500	42,000	.001400	.000033	....	....	
10,750	43,000	.001467	.000067	....	....	
11,000	44,000	.001533	.000066	....	....	Elastic limit.
11,250	45,000	.002367	.000834	....	....	
11,500	46,000	.004333	.001966	....	....	
11,750	47,000	.006033	.001700	....	....	
12,000	48,000	.007567	.001534	....	....	
12,250	49,000	.008933	.001366	....	....	
12,500	50,000	.010000	.001067	....	....	
12,750	51,000	.011000	.001000	....	....	
13,000	52,000	.011933	.000933	....	....	
13,250	53,000	.012833	.000900	....	....	
13,500	54,000	.014000	.001167	....	....	
13,750	55,000	.014933	.000933	....	....	
14,000	56,000	.016667	.001734	....	....	
14,250	57,000	.017700	.001033	....	....	
14,500	58,000	.019067	.001367	....	....	
14,750	59,000	.020700	.001633	....	....	
15,000	60,000	.022700	.002000	....	....	
15,500	62,000	.025500	.002800	....	....	
16,000	64,000	.029533	.004033	....	....	
16,500	66,000	.032667	.003134	....	....	
17,000	68,000	.037067	.004400	....	....	
17,500	70,000	.042667	.005600	....	....	
18,000	72,000	.048667	.006000	....	....	
18,500	74,000	.056667	.008000	....	....	
19,000	76,000	.066667	.010000	....	....	
19,500	78,000	.0900	.023333	....	....	
20,000	80,000	.1233	.0333	....	....	
20,020	80,080	.1600	.0367	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	80,080
Elastic limit per square inch of original section	do	44,000
Elongation per inch after rupture	inch	0.2233
Elongation per inch under strain at elastic limit	do	.001533
Reduction in diameter at point of rupture	do	.144
Reduction in area after rupture, per centum of original section		44.6
Position of rupture		″.95 from neck
Character of broken surface		silky
Elongation of inch sections		″.32*, ″.19, ″.16

No. 2174.

Marks, $^{8\ T_{19}}_{M\ T_5\ O}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.		
2,500	10,000	.000300	.000167	0.		
3,750	15,000	.000467	.000167	0.		
5,000	20,000	.000633	.000166	0.		
6,250	25,000	.000800	.000167	0.		
7,500	30,000	.001000	.000200	.000033	.000033	
8,750	35,000	.001167	.000167	.000033	0.	
9,000	36,000	.001200	.000033			
9,250	37,000	.001233	.000033			
9,500	38,000	.001300	.000067			
9,750	39,000	.001333	.000033			
10,000	40,000	.001367	.000034	.000033	0.	
10,250	41,000	.001400	.000033			
10,500	42,000	.001433	.000033			
10,750	43,000	.001467	.000034			
11,000	44,000	.001500	.000033			
11,250	45,000	.001567	.000067	.000100	.000067	Elastic limit.
11,500	46,000	.001733	.000166			
11,750	47,000	.004000	.002267			
12,000	48,000	.005833	.001833			
12,250	49,000	.006900	.001067			
12,500	50,000	.008067	.001167			
12,750	51,000	.009333	.001266			
13,000	52,000	.010333	.001000			
13,250	53,000	.011333	.001000			
13,500	54,000	.012833	.001500			
13,750	55,000	.013900	.001067			
14,000	56,000	.015200	.001300			
14,250	57,000	.016200	.001000			
14,500	58,000	.017667	.001467			
14,750	59,000	.018800	.001133			
15,000	60,000	.020000	.001200			
15,500	62,000	.023500	.003500			
16,000	64,000	.026667	.003167			
16,500	66,000	.030067	.003400			
17,000	68,000	.034333	.004266			
17,500	70,000	.039167	.004834			
18,000	72,000	.044500	.005338			
18,500	74,000	.051667	.007167			
19,000	76,000	.060000	.008333			
19,500	78,000	.0733	.0133			
20,000	80,000	.0967	.0234			
20,210	80,840	.1500	.0533			Tensile strength

General summary.

Tensile strength per square inch of original section	pounds..	80,840
Elastic limit per square inch of original section	do...	45,000
Elongation per inch after rupture	inch..	0.2300
Elongation per inch under strain at elastic limit	do...	.001567
Reduction in diameter at point of rupture	do...	.134
Reduction in area after rupture, per centum of original section		41.9
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		"1.4, ".39*, ".16

NEW TUBE NO. 19.

No. 2499.

Marks, $^{8\,T_{19}}_{B\,T_7\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5. 000	.000133	.000133	0.	....	
2, 500	10, 000	.000333	.000200	0.	....	
3, 750	15, 000	.000500	.000167	0.	....	
5, 000	20, 000	.000667	.000167	0.	....	
6, 250	25, 000	.000833	.000166	0.	....	
7, 500	30, 000	.001083	.000200	.000033	.000033	
8, 750	35, 000	.001233	.000200	....	....	
9, 000	36, 000	.001333	.000100	....	....	
9, 250	37, 000	.001400	.000067	....	....	
9, 500	38, 000	.001500	.000100	....	....	Elastic limit.
9, 750	39, 000	.004332	.002833	....	....	
10, 000	40, 000	.005867	.001534	....	....	
10, 250	41, 000	.006867	.001000	....	....	
10, 500	42, 000	.008167	.001300	....	....	
10, 750	43, 000	.009200	.001033	....	....	
11, 000	44, 000	.010667	.001467	....	....	
11, 250	45, 000	.012000	.001333	....	....	
11, 500	46, 000	.013333	.001333	....	....	
11, 750	47, 000	.014433	.001100	....	....	
12, 000	48, 000	.015667	.001234	....	....	
12, 250	49, 000	.016767	.001100	....	....	
12, 500	50, 000	.018833	.002066	....	....	
13, 000	52, 000	.023000	.004167	....	....	
13, 500	54, 000	.026500	.003500	....	....	
14, 000	56, 000	.030000	.003500	....	....	
14, 500	58, 000	.034500	.004500	....	....	
15, 000	60, 000	.040000	.005500	....	....	
15, 500	62, 000	.045667	.005667	....	....	
16, 000	64, 000	.053333	.007666	....	....	
16, 500	66, 000	.061667	.008334	....	....	
17, 000	68, 000	.0767	.015033	....	....	
17, 500	70, 000	.0967	.0200	....	....	
17, 990	71, 960	.1633	.0666	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	71, 960
Elastic limit per square inch of original section	do...	38, 000
Elongation per inch after rupture	inch..	0 2733
Elongation per inch under strain at elastic limit	do...	.001500
Reduction in diameter at point of rupture	do...	.204
Reduction in area after rupture, per centum of original section		59. 3
Position of rupture		1″.20 from neck
Character of broken surface		silky
Elongation of inch sections		″.39*, ″.29, ″.14

No. 2500.

Marks, $^{8\,T_{19}}_{B\,T_{5}\,O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000467	.000134	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000833	.000200	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001200	.000200	....	....	Elastic limit.
9,000	36,000	.001467	.000267	....	....	
9,250	37,000	.002900	.001433	....	....	
9,500	38,000	.005400	.002500	....	....	
9,750	39,000	.006633	.001233	....	....	
10,000	40,000	.008100	.001467	....	....	
10,250	41,000	.009000	.000900	....	....	
10,500	42,000	.010400	.001400	....	....	
10,750	43,000	.011333	.000933	....	....	
11,000	44,000	.012667	.001334	....	....	
11,250	45,000	.013667	.001000	....	....	
11,500	46,000	.015000	.001333	....	....	
11,750	47,000	.016333	.001333	....	....	
12,000	48,000	.018333	.002000	....	....	
12,250	49,000	.019000	.000667	....	....	
12,500	50,000	.021000	.002000	....	....	
13,000	52,000	.024667	.003667	....	....	
13,500	54,000	.028333	.003666	....	....	
14,000	56,000	.033333	.005000	....	....	
14,500	58,000	.037000	.003667	....	....	
15,000	60,000	.042333	.005333	....	....	
15,500	62,000	.048667	.006334	....	....	
16,000	64,000	.056167	.007500	....	....	
16,500	66,000	.0700	.013833	....	....	
17,000	68,000	.0833	.0133	....	....	
17,500	70,000	.1033	.0200	....	....	
17,980	71,920	.1667	.0634	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	71,920
Elastic limit per square inch of original section	do...	35,000
Elongation per inch after rupture	inch..	0.2533
Elongation per inch under strain at elastic limit	do...	.001200
Reduction in diameter at point of rupture	do...	.194
Reduction in area after rupture, per centum of original section		57.0
Position of rupture		″.70 from neck
Character of broken surface		silky
Elongation of inch sections		″.13, ″.17, ″.46*

No. 2501.

Marks, $\overset{8\,\mathrm{T}_{\frac{1}{2}}}{\mathrm{B\,T,\,M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000300	.000200	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	....	....	Elastic limit.
9, 000	36, 000	.011133	.010000	....	....	
9, 250	37, 000	.012067	.000934	....	....	
9, 500	38, 000	.012600	.000533	....	....	
9, 750	39, 000	.013333	.000733	....	....	
10, 000	40, 000	.015000	.001667	....	....	
10, 250	41, 000	.016667	.001667	....	....	
10, 500	42, 000	.017833	.001166	....	....	
10, 750	43, 000	.019167	.001334	....	....	
11, 000	44, 000	.020600	.001433	....	....	
11, 250	45, 000	.022333	.001733	....	....	
11, 500	46, 000	.024100	.001767	....	....	
11, 750	47, 000	.025667	.001567	....	....	
12, 000	48, 000	.028000	.002333	....	....	
12, 250	49, 000	.029333	.001333	....	....	
12, 500	50, 000	.032000	.002667	....	....	
13, 000	52, 000	.037000	.005000	....	....	
13, 500	54, 000	.043333	.006333	....	....	
14, 000	56, 000	.049667	.006334	....	....	
14, 500	58, 000	.056667	.007000	....	....	
15, 000	60, 000	.0700	.013333	....	....	
15, 500	62, 000	.0833	.0133	....	....	
16, 000	64, 000	.0967	.0134	....	....	
16, 500	66, 000	.1267	.0300	....	....	
16, 820	67, 280	.1933	.0666	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	67, 280
Elastic limit per square inch of original section	do...	35, 000
Elongation per inch after rupture	inch..	0. 3067
Elongation per inch under strain at elastic limit	do...	.001133
Reduction in diameter at point of rupture	do...	.194
Reduction in area after rupture, per centum of original section		57.0
Position of rupture		1″.60 from neck
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		″.19, ″.49, ″.24*

No. 2502.

Marks, $\overset{8\ T_{19}}{M\ T_{6}\ I}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000500	.000167	0.	....	
5, 000	20, 000	.000667	.000167	0.	....	
6, 250	25, 000	.000867	.000200	0.	....	
7, 500	30, 000	.001033	.000166	0.	....	
8, 750	35, 000	.001167	.000134	....	....	
9, 000	36, 000	.001233	.000066	....	....	
9, 250	37, 000	.001267	.000034	....	....	
9, 500	38, 000	.001300	.000033	....	....	
9, 750	39, 000	.001333	.000033	....	....	
10, 000	40, 000	.001400	.000067	....	....	
10, 250	41, 000	.001467	.000067	....	....	Elastic limit.
10, 500	42, 000	.001633	.000166	....	....	
10, 750	43, 000	.002533	.000900	....	....	
11, 000	44, 000	.004067	.001534	....	....	
11, 250	45, 000	.005733	.001666	....	....	
11, 500	46, 000	.007333	.001600	....	....	
11, 750	47, 000	.008667	.001334	....	....	
12, 000	48, 000	.009667	.001000	....	....	
12, 250	49, 000	.010332	.000666	....	....	
12, 500	50, 000	.011667	.001334	....	....	
13, 000	52, 000	.014433	.002766	....	....	
13, 500	54, 000	.017333	.002900	....	....	
14, 000	56, 000	.020233	.002900	....	....	
14, 500	58, 000	.023333	.003100	....	....	
15, 000	60, 000	.026667	.003334	....	....	
15, 500	62, 000	.030100	.003433	....	....	
16, 000	64, 000	.034167	.004067	....	....	
16, 500	66, 000	.038833	.004666	....	....	
17, 000	68, 000	.044500	.005667	....	....	
17, 500	70, 000	.051333	.006833	....	....	
18, 000	72, 000	.059667	.008334	....	....	
18, 500	74, 000	.0733	.013633	....	....	
19, 000	76, 000	.0933	.0200	....	....	
19, 480	77, 920	.1433	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	77, 920
Elastic limit per square inch of original section	do...	41, 000
Elongation per inch after rupture	inch..	0, 1733
Elongation per inch under strain at elastic limit	do...	.001467
Reduction in diameter at point of rupture	do...	.094
Reduction in area after rupture, per centum of original section		30, 6
Position of rupture		¾ inch from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.13, ″.15, ″.24*

No. 2503.

Marks, $^{8\ T,\ 9}_{M\ T,\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000267	.000134	0.	....	
3, 750	15, 000	.000400	.000133	0.	....	
5, 000	20, 000	.000567	.000167	0.	....	
6, 250	25, 000	.000767	.000200	0.	....	
7, 500	30, 000	.000967	.000200	0.	....	
8, 750	35, 000	.001133	.000166	....	....	
9, 000	36, 000	.001167	.000034	....	....	
9, 250	37, 000	.001233	.000066	....	....	
9, 500	38, 000	.001267	.000034	....	....	
9, 750	39, 000	.001333	.000066	....	....	
10, 000	40, 000	.001400	.000067	....	....	
10, 250	41, 000	.001433	.000033	....	....	Elastic limit.
10, 500	42, 000	.004500	.003067	....	....	
10, 750	43, 000	.005500	.001000	....	....	
11, 000	44, 000	.007500	.002000	....	....	
11, 250	45, 000	.008667	.001167	....	....	
11, 500	46, 000	.010000	.001333	....	....	
11, 750	47, 000	.011000	.001000	....	....	
12, 000	48, 000	.011833	.000833	....	....	
12, 250	49, 000	.012667	.000834	....	....	
12, 500	50, 000	.014167	.001500	....	....	
13, 000	52, 000	.016667	.002500	....	....	
13, 500	54, 000	.020000	.003333	....	....	
14, 000	56, 000	.022700	.002700	....	....	
14, 500	58, 000	.025833	.003133	....	....	
15, 000	60, 000	.029667	.003834	....	....	
15, 500	62, 000	.033333	.003666	....	....	
16, 000	64, 000	.038000	.004667	....	....	
16, 500	66, 000	.043333	.005333	....	....	
17, 000	68, 000	.049667	.006334	....	....	
17, 500	70, 000	.057333	.007666	....	....	
18, 000	72, 000	.0700	.012667	....	....	
18, 500	74, 000	.0867	.0167	....	....	
19, 000	76, 000	.1133	.0266	....	....	
19, 200	76, 800	.1433	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 76, 800
Elastic limit per square inch of original section ....do... 41, 000
Elongation per inch after rupture ....inch.. 0. 2633
Elongation per inch under strain at elastic limit ....do... .001433
Reduction in diameter at point of rupture ....do... .184
Reduction in area after rupture, per centum of original section 54. 6
Position of rupture .... 1″.55 from neck; oblique
Character of broken surface ....silky
Elongation of inch sections ....″.13, ″.43*, ″.23

No. 2504.

Marks, $\overset{8\ T_{1},}{M\ T_{2}\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

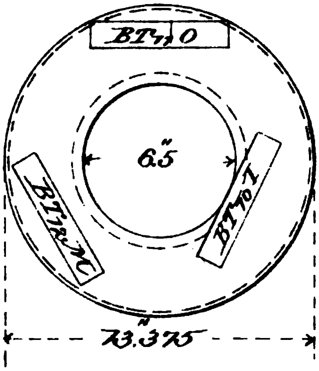
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000967	.000200	0.	....	
8, 750	35, 000	.001133	.000166	....	....	
9, 000	36, 000	.001167	.000034	....	....	
9, 250	37, 000	.001233	.000066	....	....	
9, 500	38, 000	.001333	.000100	....	....	
9, 750	39, 000	.001400	.000067	....	....	Elastic limit.
10, 000	40, 000	.001533	.000133	....	....	
10, 250	41, 000	.004067	.002534	....	....	
10, 500	42, 000	.007100	.003033	....	....	
10, 750	43, 000	.008000	.000900	....	....	
11, 000	44, 000	.009333	.001333	....	....	
11, 250	45, 000	.010700	.001367	....	....	
11, 500	46, 000	.011413	.000713	....	....	
11, 750	47, 000	.012367	.000954	....	....	
12, 000	48, 000	.013933	.001566	....	....	
12, 250	49, 000	.014833	.000900	....	....	
12, 500	50, 000	.016333	.001500	....	....	
13, 000	52, 000	.019567	.003234	....	....	
13, 500	54, 000	.023000	.003433	....	....	
14, 000	56, 000	.027000	.004000	....	....	
14, 500	58, 000	.029167	.002167	....	....	
15, 000	60, 000	.033167	.004000	....	....	
15, 500	62, 000	.038500	.005333	....	....	
16, 000	64, 000	.044000	.005500	....	....	
16, 500	66, 000	.050833	.006833	....	....	
17, 000	68, 000	.058167	.007334	....	....	
17, 500	70, 000	.0667	.008533	....	....	
18, 000	72, 000	.0833	.0166	....	....	
18, 500	74, 000	.1067	.0234	....	....	
18, 760	75, 040	.1600	.0533	....	....	Tensile strength.

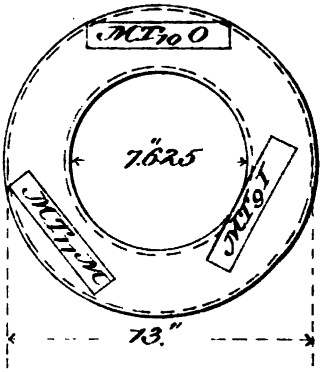
General summary.

Tensile strength per square inch of original section	pounds..	75, 040
Elastic limit per square inch of original section	do...	39, 000
Elongation per inch after rupture	inch..	0. 2367
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.184
Reduction in area after rupture, per centum of original section		54. 6
Position of rupture		1 inch from neck
Character of broken surface		silky
Elongation of inch sections		″.41*, ″.18, ″.12

New Tube No. 19 8" converted Rifle

Additional specimens





No. 2624.

Marks, $^{8\ \mathrm{Cn\ R_{19}\ T}}_{\mathrm{B\ T_{19}\ I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000333	.000200	0.	....	
3, 750	15, 000	.000533	.000200	0.	....	
5, 000	20, 000	.000700	.000167	0.	....	
6, 250	25, 000	.000867	.000167	0.	....	
7, 500	30, 000	.001033	.000166	.000033	.000033	
8, 750	35, 000	.001167	.000134	....	....	
10, 000	40, 000	.001367	.000200	....	....	
10, 250	41, 000	.001400	.000033	....	....	Elastic limit.
10, 500	42, 000	.003167	.001767	....	....	
10, 750	43, 000	.005667	.002500	....	....	
11, 000	44, 000	.007100	.001433	....	....	
11, 250	45, 000	.008000	.000900	....	....	
11, 500	46, 000	.009233	.001233	....	....	
11, 750	47, 000	.010233	.001000	....	....	
12, 000	48, 000	.011567	.001334	....	....	
12, 250	49, 000	.012667	.001100	....	....	
12, 500	50, 000	.014033	.001366	....	....	
13, 000	52, 000	.016433	.002400	....	....	
13, 500	54, 000	.019333	.002900	....	....	
14, 000	56, 000	.022000	.002667	....	....	
14, 500	58, 000	.025200	.003200	....	....	
15, 000	60, 000	.028667	.003467	....	....	
15, 500	62, 000	.032900	.004233	....	....	
16, 000	64, 000	.037067	.004167	....	....	
16, 500	66, 000	.0433	.006233	....	....	
17, 000	68, 000	.0533	.0100	....	....	
17, 500	70, 000	.0600	.0067	....	....	
18, 000	72, 000	.0667	.0067	....	....	
18, 500	74, 000	.0833	.0166	....	....	
19, 000	76, 000	.1067	.0234	....	....	
19, 180	76, 720	.1433	.0366	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	76, 720
Elastic limit per square inch of original section..........do...	41, 000
Elongation per inch after rupture..........inch..	0. 2333
Elongation per inch under strain at elastic limit..........do...	.001400
Reduction in diameter at point of rupture..........do...	.144
Reduction in area after rupture, per centum of original section..........	44. 6
Position of rupture..........	″.95 from neck
Character of broken surface..........	silky; opened cracks in surface of stem
Elongation of inch sections..........	″.12, ″.21, ″.37*

No. 2625.

Marks, $^{8\,C_{8}\,R_{19}\,T}_{\;\;B\,T_{11}\,O}$
Diameter, ''.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000733	.000133	0.	....	
7, 500	30, 000	.000933	.000200	0.	....	
8, 750	35, 000	.001100	.000167	....	....	
9, 000	36, 000	.001133	.000033	....	....	
9, 250	37, 000	.001200	.000067	....	....	Elastic limit.
9, 500	38, 000	.001333	.000133	....	....	
9, 750	39, 000	.002000	.000667	....	....	
10, 000	40, 000	.003667	.001667	....	....	
10, 250	41, 000	.005667	.002000	....	....	
10, 500	42, 000	.007000	.001333	....	....	
10, 750	43, 000	.008567	.001567	....	....	
11, 000	44, 000	.009367	.000800	....	....	
11, 500	46, 000	.011067	.001700	....	....	
12, 000	48, 000	.013533	.002466	....	....	
12, 500	50, 000	.015667	.002134	....	....	
13, 000	52, 000	.018333	.002666	....	....	
13, 500	54, 000	.021367	.003034	....	....	
14, 000	56, 000	.024333	.002966	....	....	
14, 500	58, 000	.028000	.003667	....	....	
15, 000	60, 000	.032033	.004033	....	....	
15, 500	62, 000	.036033	.004000	....	....	
16, 000	64, 000	.0400	.003967	....	....	
16, 500	66, 000	.0467	.0067	....	....	
17, 000	68, 000	.0567	.0100	....	....	
17, 500	70, 000	.0667	.0100	....	....	
18, 000	72, 000	.0767	.0100	....	....	
18, 500	74, 000	.1033	.0266	....	....	
18, 950	75, 800	.1633	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	75, 800
Elastic limit per square inch of original section ....do...	37, 000
Elongation per inch after rupture ....inch..	0. 2333
Elongation per inch under strain at elastic limit............do...	.001200
Reduction in diameter at point of rupture ....do...	.134
Reduction in area after rupture, per centum of original section............	41. 9
Position of rupture............	1''.65 from neck
Character of broken surface	silky
Elongation of inch sections............	''.17, ''.38*, ''.15

No. 2626.

Marks, $\begin{smallmatrix}8\,C_2\,R_{12}\,T\\B\,T_{12}\,M\end{smallmatrix}$
Diameter ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000667	.000234	0.	....	
6,250	25,000	.000800	.000133	0.	....	
7,500	30,000	.001000	.000200	0.	....	
8,750	35,000	.001167	.000167	....	....	
9,000	36,000	.001200	.000033	....	....	
9,250	37,000	.001267	.000067	....	....	
9,500	38,000	.001333	.000066	....	....	Elastic limit.
9,750	39,000	.002000	.000667	....	....	
10,000	40,000	.004767	.002767	....	....	
10,250	41,000	.006033	.001266	....	....	
10,500	42,000	.007167	.001134	....	....	
10,750	43,000	.008233	.001066	....	....	
11,000	44,000	.009367	.001134	....	....	
11,500	46,000	.011900	.002533	....	....	
12,000	48,000	.014333	.002433	....	....	
12,500	50,000	.016667	.002334	....	....	
13,000	52,000	.019067	.002400	....	....	
13,500	54,000	.022033	.002966	....	....	
14,000	56,000	.025467	.003434	....	....	
14,500	58,000	.029000	.003533	....	....	
15,000	60,000	.032833	.003833	....	....	
15,500	62,000	.037233	.004400	....	....	
16,000	64,000	.0433	.006067	....	....	
16,500	66,000	.0500	.0067	....	....	
17,000	68,000	.0567	.0067	....	....	
17,500	70,000	.0667	.0100	....	....	
18,000	72,000	.0767	.0100	....	....	
18,500	74,000	.1033	.0266	....	....	
18,820	75,280	.1667	.0634	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..................................pounds.. 75,280
Elastic limit per square inch of original section..................................do... 38,000
Elongation per inch after rupture..................................inch.. 0.2367
Elongation per inch under strain at elastic limit..................................do... .001333
Reduction in diameter at point of rupture..................................do... .174
Reduction in area after rupture, per centum of original section..................................do... 52.2
Position of rupture..................................1″.20 from neck
Character of broken surface..................................silky
Elongation of inch sections..................................″.35*, ″.23, ″.13

No. 2625.

Marks, $\begin{smallmatrix}{}^{8}C_{8}\,R_{19}\,T\\ B\,T_{11}\,O\end{smallmatrix}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000733	.000133	0.	....	
7,500	30,000	.000933	.000200	0.	....	
8,750	35,000	.001100	.000167	....	....	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001200	.000067	....	....	Elastic limit.
9,500	38,000	.001333	.000133	....	....	
9,750	39,000	.002000	.000667	....	....	
10,000	40,000	.003667	.001667	....	....	
10,250	41,000	.005667	.002000	....	....	
10,500	42,000	.007000	.001333	....	....	
10,750	43,000	.008567	.001567	....	....	
11,000	44,000	.009367	.000800	....	....	
11,500	46,000	.011067	.001700	....	....	
12,000	48,000	.013533	.002466	....	....	
12,500	50,000	.015667	.002134	....	....	
13,000	52,000	.018333	.002666	....	....	
13,500	54,000	.021367	.003034	....	....	
14,000	56,000	.024333	.002966	....	....	
14,500	58,000	.028000	.003667	....	....	
15,000	60,000	.032033	.004033	....	....	
15,500	62,000	.036033	.004000	....	....	
16,000	64,000	.0400	.003967	....	....	
16,500	66,000	.0467	.0067	....	....	
17,000	68,000	.0567	.0100	....	....	
17,500	70,000	.0667	.0100	....	....	
18,000	72,000	.0767	.0100	....	....	
18,500	74,000	.1033	.0266	....	....	
18,950	75,800	.1633	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	75,800
Elastic limit per square inch of original section	do...	37,000
Elongation per inch after rupture	inch..	0.2333
Elongation per inch under strain at elastic limit	do...	.001200
Reduction in diameter at point of rupture	do...	.134
Reduction in area after rupture, per centum of original section		41.9
Position of rupture		1″.65 from neck
Character of broken surface		silky
Elongation of inch sections		″.17, ″.38*, ″.15

No. 2626.

Marks, $\genfrac{}{}{0pt}{}{{}^{8}C_{2}R_{12}T}{BT_{12}M}$
Diameter ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000267	.000134	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000667	.000234	0.	....	
6, 250	25, 000	.000800	.000133	0.	....	
7, 500	30, 000	.001000	.000200	0.	....	
8, 750	35, 000	.001167	.000167	....	....	
9, 000	36, 000	.001200	.000033	....	....	
9, 250	37, 000	.001267	.000067	....	....	
9, 500	38, 000	.001333	.000066	....	....	Elastic limit.
9, 750	39, 000	.002000	.000667	....	....	
10, 000	40, 000	.004767	.002767	....	....	
10, 250	41, 000	.006033	.001266	....	....	
10, 500	42, 000	.007167	.001134	....	....	
10, 750	43, 000	.008233	.001066	....	....	
11, 000	44, 000	.009367	.001134	....	....	
11, 500	46, 000	.011900	.002533	....	....	
12, 000	48, 000	.014333	.002433	....	....	
12, 500	50, 000	.016667	.002334	....	....	
13, 000	52, 000	.019067	.002400	....	....	
13, 500	54, 000	.022033	.002966	....	....	
14, 000	56, 000	.025467	.003434	....	....	
14, 500	58, 000	.029000	.003533	....	....	
15, 000	60, 000	.032833	.003833	....	....	
15, 500	62, 000	.037233	.004400	....	....	
16, 000	64, 000	.0433	.006067	....	....	
16, 500	66, 000	.0500	.0067	....	....	
17, 000	68, 000	.0567	.0067	....	....	
17, 500	70, 000	.0667	.0100	....	....	
18, 000	72, 000	.0767	.0100	....	....	
18, 500	74, 000	.1033	.0266	....	....	
18, 820	75, 280	.1667	.0634	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	75, 280
Elastic limit per square inch of original section	do...	38, 000
Elongation per inch after rupture	inch..	0. 2367
Elongation per inch under strain at elastic limit	do...	.001333
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section	do...	52. 2
Position of rupture		1″.20 from neck
Character of broken surface		silky
Elongation of inch sections		″.35*, ″.23, ″.13

No. 2627.

Marks, $\substack{\text{8 Cn R}_{1t}\text{ T} \\ \text{M T, I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000200	.000200	.000033	.000033	
2,500	10,000	.000433	.000233	.000067	.000034	
3,750	15,000	.000633	.000200	.000067	0.	
5,000	20,000	.000333	.000200	.000067	0.	
6,250	25,000	.000967	.000134	.000067	0.	
7,500	30,000	.001133	.000166	.000067	0.	
8,750	35,000	.001333	.000200	....	....	
9,000	36,000	.001367	.000034	....	....	
9,250	37,000	.001400	.000033	....	....	
9,500	38,000	.001433	.000033	....	....	
9,750	39,000	.001500	.000067	....	....	
10,000	40,000	.001533	.000033	....	....	Elastic limit.
10,250	41,000	.001667	.000134	....	....	
10,500	42,000	.002033	.000366	....	....	
10,750	43,000	.003333	.001300	....	....	
11,000	44,000	.005400	.002067	....	....	
11,250	45.000	.006400	.001000	....	....	
11,500	46,000	.007700	.001300	....	....	
12,000	48,000	.009867	.002167	....	....	
12,500	50,000	.012167	.002300	....	....	
13,000	52,000	.014733	.002566	....	....	
13,500	54,000	.016833	.002100	....	....	
14,000	56,000	.019333	.002500	....	....	
14,500	58,000	.022500	.003167	....	....	
15,000	60,000	.025333	.002833	....	....	
15,500	62,000	.028867	.003534	....	....	
16,000	64,000	.032667	.003800	....	....	
16,500	60,000	.037500	.004833	....	....	
17,000	68,000	.0400	.0025	....	....	
17,500	70,000	.0467	.0067	....	....	
18,000	72,000	.0567	.0100	....	....	
18,500	74,000	.0667	.0100	....	....	
19,000	76,000	.0767	.0100	....	....	
19,500	78,000	.1067	.0300	....	....	
19,700	78,800	.1633	.0566	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	78,800
Elastic limit per square inch of original section	do...	40,000
Elongation per inch after rupture	inch..	0.2133
Elongation per inch under strain at elastic limit	do...	.001533
Reduction in diameter at point of rupture	do...	.194
Reduction in area after rupture, per centum of original section		57.0
Position of rupture,		″.05 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.19, ″.42*, ″.12

No. 2628.

Marks, $\begin{smallmatrix}8\,\mathrm{Cn}\,\mathrm{R}_{19}\,\mathrm{T}\\ \mathrm{M}\,\mathrm{T}_{10}\,\mathrm{O}\end{smallmatrix}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000633	.000200	0.	....	
6, 250	25, 000	.000767	.000134	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001100	.000167	....	....	
10, 000	40, 000	.001333	.000233	....	....	
10, 250	41, 000	.001367	.000034	....	....	
10, 500	42, 000	.001400	.000033	....	....	
10, 750	43, 000	.001400	0.	....	....	
11, 000	44, 000	.001433	.000033	....	....	
11, 250	45. 000	.001533	.000100	....	....	
11, 500	46, 000	.001600	.000067	....	....	Elastic limit.
11, 750	47, 000	.001767	.000167	....	....	
12, 000	48, 000	.002700	.000933	....	....	
12, 250	49, 000	.004167	.001467	....	....	
12, 500	50, 000	.006333	.002166	....	....	
13, 000	52, 000	.008400	.002067	....	....	
13, 500	54, 000	.010667	.002267	....	....	
14, 000	56, 000	.013033	.002366	....	....	
14, 500	58, 000	.015333	.002300	....	....	
15, 000	60, 000	.018000	.002667	....	....	
15, 500	62, 000	.020400	.002400	....	....	
16, 000	64, 000	.023333	.002933	....	....	
16, 500	66, 000	.026500	.003167	....	....	
17, 000	68, 000	.029667	.003167	....	....	
17, 500	70, 000	.034000	.004333	....	....	
18, 000	72, 000	.038067	.004067	....	....	
18, 500	74, 000	.0433	.005233	....	....	
19, 000	76, 000	.0467	.0034	....	....	
19, 500	78, 000	.0600	.0133	....	....	
20, 000	80, 000	.0667	.0067	....	....	
20, 500	82, 000	.0867	.0200	....	....	
20, 900	83, 600	.1333	.0466	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	83, 600
Elastic limit per square inch of original section	do...	46, 000
Elongation per inch after rupture	inch..	0. 2067
Elongation per inch under strain at elastic limit	do...	.001600
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		″.10 from neck
Character of broken surface		silky
Elongation of inch sections		″.12, ″.19, ″.31

No. 2629.

Marks, ${}^{8\,\mathrm{C.\,B_{1}.\,T}}_{\mathrm{M\,T_{11}\,M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

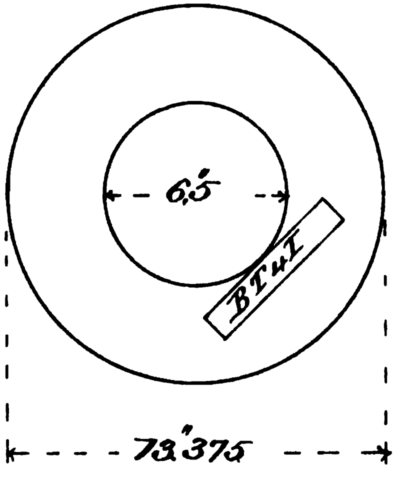
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000867	.000234	0.	....	
7, 500	30, 000	.001033	.000166	0.	....	
8, 750	35, 000	.001233	.000200	....	....	
9, 000	36, 000	.001267	.000034	....	....	
9, 250	37, 000	.001267	0.	....	....	
9, 500	38, 000	.001300	.000033	....	....	
9, 750	39, 000	.001333	.000033	....	....	
10, 000	40, 000	.001367	.000034	....	....	
10, 250	41, 000	.001433	.000066	....	....	
10, 500	42, 000	.001433	0.	....	....	
10, 750	43, 000	.001467	.000034	....	....	
11, 000	44, 000	.001533	.000066	....	....	
11, 250	45, 000	.001600	.000067	....	....	Elastic limit.
11, 500	46, 000	.001833	.000233	....	....	
11, 750	47, 000	.002700	.000867	....	....	
12, 000	48, 000	.004667	.001967	....	....	
12, 250	49, 000	.005833	.001166	....	....	
12, 500	50, 000	.007333	.001500	....	....	
13, 000	52, 000	.009667	.002334	....	....	
13, 500	54, 000	.012000	.002333	....	....	
14, 000	56, 000	.014333	.002333	....	....	
14, 500	58, 000	.016867	.002534	....	....	
15, 000	60, 000	.019367	.002500	....	....	
15, 500	62, 000	.022033	.002666	....	....	
16, 000	64, 000	.025167	.003134	....	....	
16, 500	66, 000	.028833	.003666	....	....	
17, 000	68, 000	.032667	.003834	....	....	
17, 500	70, 000	.037500	.004833	....	....	
18, 000	72, 000	.0433	.0058	....	....	
18, 500	74, 000	.0500	.0067	....	....	
19, 000	76, 000	.0567	.0067	....	....	
19, 500	78, 000	.0667	.0100	....	....	
20, 000	70, 000	.0800	.0133	....	....	
20, 500	82, 000	.1100	.0300	....	....	
20, 560	82, 240	.1500	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	83, 240
Elastic limit per square inch of original section	do...	45, 000
Elongation per inch after rupture	inch	0. 2033
Elongation per inch under strain at elastic limit	do ..	.001600
Reduction in diameter at point of rupture	do...	.124
Reduction in area after rupture, per centum of original section		39. 2
Position of rupture		¼ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.09, ″.16, ″.36*

Tube No. 23   8" converted Rifle

Additional specimen



H Ex 3/ 49 2

No. 1160.

Marks, $^{8\,T_{28}}_{B\,T_4\,I}$
Diameter, ″.564
Sectional area, .25 square inch.

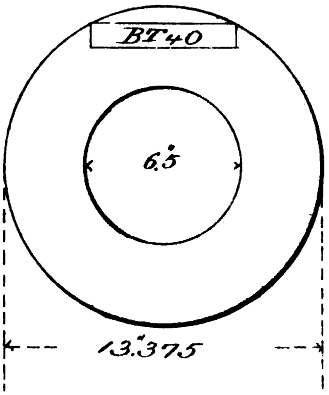
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000233	.000133	0.	....	
3, 750	15, 000	.000400	.000167	0.	....	
5, 000	20, 000	.000567	.000167	0.	....	
6, 250	25, 000	.000733	.000166	0.	....	
7, 500	30, 000	.000900	.000167	0.	....	
8, 750	35, 000	.001067	.000167	0.	....	
9, 000	36, 000	.001100	.000033	....	....	
9, 250	37, 000	.001133	.000033	....	....	
9, 500	38, 000	.001167	.000034	....	....	
9, 750	39, 000	.001200	.0 0033	....	....	
10, 000	40, 000	.001233	.000033	0.	....	
10, 250	41, 000	.001267	.000034	....	....	
10, 500	42, 000	.001300	.000033	....	....	
10, 750	43, 000	.001300	0.	....	....	
11, 000	44, 000	.001333	.000033	....	....	
11, 250	45, 000	.001367	.000034	0.	....	
11, 500	46, 000	.001433	.000066	....	....	Elastic limit.
11, 750	47, 000	.001567	.000134	....	....	
12, 000	48, 000	.002333	.000766	....	....	
12, 250	49, 000	.004167	.001834	....	....	
12, 500	50, 000	.005933	.001766	.004200	.004200	
12, 750	51, 000	.007067	.001134	....	....	
13, 000	52, 000	.008367	.001300	....	....	
13, 250	53, 000	.010000	.001633	....	....	
13, 500	54, 000	.010833	.000833	....	....	
13, 750	55, 000	.011933	.001100	....	....	
14, 000	56, 000	.013167	.001234	....	....	
14, 250	57, 000	.014333	.001166	....	....	
14, 500	58, 000	.015667	.001334	....	....	
14, 750	59, 000	.017400	.001733	....	....	
15, 000	60, 000	.019033	.001633	....	....	
15, 500	62, 000	.022267	.003234	....	....	
16, 000	64, 000	.025667	.003400	....	....	
16, 500	66, 000	.030000	.004333	....	....	
17, 000	68, 000	.034133	.004133	....	....	
17, 500	70, 000	.038933	.004800	....	....	
18, 000	72, 000	.046333	.007400	....	....	
18, 500	74, 000	.053667	.007334	....	....	
19, 000	76, 000	.065000	.011334	....	....	
19, 500	78, 000	.080500	.015500	....	....	
19, 760	79, 040	.1233	.0428	....	....	Tensile strength.

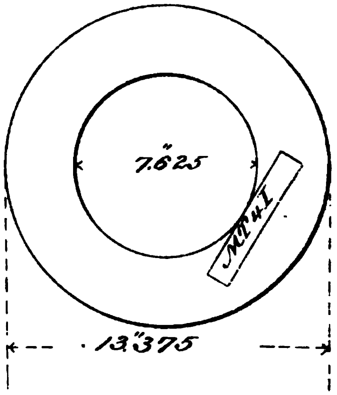
General summary.

Tensile strength per square inch of original section..........pounds.. 79, 040
Elastic limit per square inch of original section..........do... 46, 000
Elongation per inch after rupture..........inch.. 0.2033
Elongation per inch under strain at elastic limit..........do... .001433
Reduction in diameter at point of rupture..........do... .094
Reduction in area after rupture, per centum of original section.......... 30.6
Position of rupture..........″.65 from neck
Character of broken surface, granular; dull spot at circumference; crack ″.3 long opened in cylindrical surface of stem.
Minimum diameter ½ inch from point of rupture..........″.43
Elongation of inch sections..........″.36* ″.15, ″.10

Tube No. 26 8" converted Rifle

Additional specimens





No. 1161.

Marks, $^{8\,T_{26}}_{B\,T_4\,O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000233	.000133	0.	....	
3,750	15,000	.000400	.000167	0.	....	
5,000	20,000	.000567	.000167	0.	....	
6,250	25,000	.000733	.000166	0.	....	
7,500	30,000	.000900	.000167	0.	....	
8,750	35,000	.001067	.000167	0.	....	
10,000	40,000	.001233	.000166	0.	....	Elastic limit.
10,250	41,000	.001400	.000167	....	....	
10,500	42,000	.003733	.002333	....	....	
10,750	43,000	.004667	.000934	....	....	
11,000	44,000	.005833	.001166	....	....	
11,250	45,000	.007067	.001234	.005433	.005433	
11,500	46,000	.008000	.000933	....	....	
11,750	47,000	.008700	.000700	....	....	
12,000	48,000	.009800	.001100	....	....	
12,250	49,000	.010833	.001033	....	....	
12,500	50,000	.012167	.001334	.010300	.004867	
12,750	51,000	.012800	.000633	....	....	
13,000	52,000	.013833	.001033	....	....	
13,250	53,000	.015367	.001534	....	....	
13,500	54,000	.016767	.001400	....	....	
13,750	55,000	.018167	.001400	....	....	
14,000	56,000	.019667	.001500	....	....	
14,250	57,000	.020833	.001166	....	....	
14,500	58,000	.021867	.001034	....	....	
14,750	59,000	.023733	.001866	....	....	
15,000	60,000	.025400	.001667	....	....	
15,500	62,000	.028900	.003500	....	....	
16,000	64,000	.032833	.003933	....	....	
16,500	66,000	.037500	.004667	....	....	
17,000	68,000	.042500	.005000	....	....	
17,500	70,000	.048667	.006167	....	....	
18,000	72,000	.056167	.007500	....	....	
18,500	74,000	.071500	.015333	....	....	
19,000	76,000	.0867	.0152	....	....	
19,250	77,000	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	77,000
Elastic limit per square inch of original section	do...	40,000
Elongation per inch after rupture	inch..	0.1067
Elongation per inch under strain at elastic limit	do...	.001233
Reduction in diameter at point of rupture	do...	.044
Reduction in area after rupture, per centum of original section		15.0
Position of rupture		″.85 from neck
Character of broken surface		granular; dull colored metal at the circumference
Elongation of inch sections		″.14*, ″.10 ″.08

No. 1162.

Marks, $\overset{8\,T_{26}}{M\,T_{4}\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	.000033	.000033	
2, 500	10, 000	.000367	.000200	.000067	.000034	
3, 750	15, 000	.000567	.000200	.000100	.000033	
5, 000	20, 000	.000733	.000166	.000100	0.	
6, 250	25, 000	.000833	.000100	.000100	0.	
7, 500	30, 000	.000933	.000100	.000100	0.	
8, 750	35, 000	.001100	.000167	.000100	0.	
10, 000	40, 000	.001200	.000100	.000100	0.	
10, 250	41, 000	.001267	.000067	....	....	
10, 500	42, 000	.001333	.000066	....	....	
10, 750	43, 000	.001367	.000034	....	....	
11, 000	44, 000	.001400	.000033	....	....	
11, 250	45, 000	.001400	0.	.000100	0.	Elastic limit.
11, 500	46, 000	.001667	.000267	....	....	
11, 750	47, 000	.001833	.000166	....	....	
12, 000	48, 000	.002333	.000500	....	....	
12, 250	49, 000	.003900	.001567	....	....	
12, 500	50, 000	.005200	.001300	.003567	.003467	
12, 750	51, 000	.006000	.000800	....	....	
13, 000	52, 000	.006933	.000933	....	....	
13, 250	53, 000	.008033	.001100	....	....	
13, 500	54, 000	.009067	.001034	....	....	
13, 750	55, 000	.010200	.901133	....	....	
14, 000	56, 000	.011167	.000967	....	....	
14, 250	57, 000	.012200	.001033	....	....	
14, 500	58, 000	.013333	.001133	....	....	
14, 750	59, 000	.014667	.001334	....	....	
15, 000	60, 000	.015933	.001266	....	....	
15, 500	62, 000	.018100	.002167	....	....	
16, 000	64, 000	.020500	.002400	....	....	
16, 500	66, 000	.023333	.002833	....	....	
17, 000	68, 000	.026367	.003034	....	....	
17, 500	70, 000	.029667	.003300	....	....	
18, 000	72, 000	.033333	.003666	....	....	
18, 500	74, 060	.038000	.004667	....	....	
19, 000	76, 000	.043167	.005167	....	....	
19, 500	78, 000	.049000	.005833	....	....	
20, 000	80, 000	.058500	.009500	....	....	
20, 500	82, 000	.0700	.0115	....	....	
21, 000	84, 000	.0933	.0233	....	....	
21, 190	84, 760	.1400	.0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	84, 760
Elastic limit per square inch of original section	do...	45, 000
Elongation per inch after rupture	inch..	0. 2233
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		1 inch from neck
Character of broken surface		silky
Elongation of inch sections		″.38, ″.18, ″.11

NEW TUBE No. 26.

No. 2359.

Marks, $\overset{\text{8 T}x}{\text{B T}_{5}\text{ I}}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000433	.000133	0.	....	
5, 000	20, 000	.000633	.000200	0.	....	
6, 250	25, 000	.050833	.000200	0.	....	
7, 500	30, 000	.000933	.000100	0.	....	
8, 750	35, 000	.001100	.000167	0.	....	
10, 000	40, 000	.001267	.000167	0.	....	
10, 250	41, 000	.001300	.000033	....	....	Elastic limit.
10, 500	42, 000	.009333	.008033	....	....	
10, 750	43, 000	.011000	.001667	....	....	
11, 000	44, 000	.014067	.003067	....	....	
11, 250	45, 000	.015000	.000933	....	....	
11, 500	46, 000	.016900	.005400	....	....	
11, 750	47, 000	.017567	.000667	....	....	
12, 000	48, 000	.019367	.001800	....	....	
12, 250	49, 000	.021333	.001966	....	....	
12, 500	50, 000	.023333	.002000	....	....	
13, 000	52, 000	.027333	.004000	....	....	
13, 500	54, 000	.031667	.004334	....	....	
14, 000	56, 000	.037833	.006166	....	....	
14, 500	58, 000	.044000	.006167	....	....	
15, 000	60, 000	.051167	.007167	....	....	
15, 500	62, 000	.061333	.010166	....	....	
16, 000	64, 000	.0733	.011967	....	....	
16, 500	66, 000	.0933	.0200	....	....	
17, 000	68, 000	.1267	.0334	....	....	
17, 160	68, 640	.1733	.0466	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................pounds..	68, 640
Elastic limit per square inch of original section....................do...	41, 000
Elongation per inch after rupture....................inch..	0. 2800
Elongation per inch under strain at elastic limit....................do...	.001300
Reduction in diameter at point of rupture....................do...	.234
Reduction in area after rupture, per centum of original section....................	65. 8
Position of rupture....................	1 inch from neck
Character of broken surface....................	silky
Elongation of inch sections....................	".14, ".20, ".50*

No. 2360.

Marks, $\overset{8\ T_{*}}{B\ T.\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000467	.000200	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
10, 000	40, 000	.001300	.000167	0.	....	
10, 250	41, 000	.001367	.000067	0.	....	Elastic limit.
10, 500	42, 000	.013167	.011800	....	....	
10, 750	43, 000	.013733	.000566	....	....	
11, 000	44, 000	.015167	.001434	....	....	
11, 250	45, 000	.016583	.001366	....	....	
11, 500	46, 000	.018333	.001800	....	....	
11, 750	47, 000	.019667	.001334	....	....	
12, 000	48, 000	.021167	.001500	....	....	
12, 250	49, 000	.023033	.001866	....	....	
12, 500	50, 000	.024833	.001800	....	....	
13, 000	52, 000	.028667	.003834	....	....	
13, 500	54, 000	.033667	.005000	....	....	
14, 000	56, 000	.038333	.004666	....	....	
14, 500	58, 000	.045333	.007000	....	....	
15, 000	60, 000	.052267	.006934	....	....	
15, 500	62, 000	.062167	.009900	....	....	
16, 000	64, 000	.0733	.011133	....	....	
16, 500	66, 000	.0933	.0200	....	....	
17, 000	68, 000	.1233	.0300	....	....	
17, 300	69, 200	.1800	.0567	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	69, 200
Elastic limit per square inch of original section	do...	41, 000
Elongation per inch after rupture	inch..	0. 2967
Elongation per inch under strain at elastic limit	do...	.001367
Reduction in diameter at point of rupture	do...	.204
Reduction in area after rupture, per centum of original section	do...	59. 3
Position of rupture		1″.5 from neck
Character of broken surface		silky
Elongation of inch sections		″.15, ″.50*, ″.24

No. 2361.

Marks, $\overset{8\,T_{26}}{B\,T_7\,M}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
9,500	38,000	.001233	.000100	....	....	Elastic limit.
9,750	39,000	.001300	.000067	....	....	
10,000	40,000	.008333	.007033	....	....	
10,250	41,000	.008667	.000334	....	....	
10,500	42,000	.009667	.001000	....	....	
10,750	43,000	.011000	.001333	....	....	
11,000	44,000	.012500	.001500	....	....	
11,250	45,000	.014000	.001500	....	....	
11,500	46,000	.015667	.001667	....	....	
11,750	47,000	.017000	.001333	....	....	
12,000	48,000	.018333	.001333	....	....	
12,250	49,000	.019667	.001334	....	....	
12,500	50,000	.021333	.001666	....	....	
13,000	52,000	.025667	.004334	....	....	
13,500	54,000	.030667	.005000	....	....	
14,000	56,000	.034333	.003666	....	....	
14,500	58,000	.040000	.005667	....	....	
15,000	60,000	.046667	.006667	....	....	
15,500	62,000	.055000	.008333	....	....	
16,000	64,000	.0667	.0117	....	....	
16,500	66,000	.0800	.0133	....	....	
17,000	68,000	.1033	.0233	....	....	
17,480	69,920	.1867	.0834	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	69,920
Elastic limit per square inch of original section	do...	38,000
Elongation per inch after rupture	inch..	0.3033
Elongation per inch under strain at elastic limit	do...	.001233
Reduction in diameter at point of rupture	do...	.225
Reduction in area after rupture, per centum of original section		63.7
Position of rupture		1″.63 from neck
Character of broken surface		silky
Elongation of inch sections		″.22, ″.52*, ″.17

No. 2362.

Marks, $\overset{8\ T*}{M\ T_{s}\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000500	.000167	0.	....	
5, 000	20, 000	.000667	.000167	0.	....	
6, 250	25, 000	.000833	.000166	0.	....	
7, 500	30, 000	.000967	.000134	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
10, 000	40, 000	.001267	.000134	0.	....	
10, 250	41, 000	.001300	.000033	....	....	Elastic limit.
10, 500	42, 000	.002667	.001367	....	....	
10, 750	43, 000	.005400	.002733	....	....	
11, 000	44, 000	.008000	.002600	....	....	
11, 250	45, 000	.008667	.000667	....	....	
11, 500	46, 000	.009900	.001233	....	....	
11, 750	47, 000	.011000	.001100	....	....	
12, 000	48, 000	.012333	.001333	....	....	
12, 250	49, 000	.013333	.001000	....	....	
12, 500	50, 000	.014667	.001334	....	....	
13, 000	52, 000	.017500	.002833	....	....	
13, 500	54, 000	.020667	.003167	....	....	
14, 000	56, 000	.024167	.003500	....	....	
14, 500	58, 000	.027000	.002833	....	....	
15, 000	60, 000	.031000	.004000	....	....	
15, 500	62, 000	.035667	.004667	....	....	
16, 000	64, 000	.040667	.005000	....	....	
16, 500	66, 000	.046500	.005833	....	....	
17, 000	68, 000	.054000	.007500	....	....	
17, 500	70, 000	.063333	.009333	....	....	
18, 000	72, 000	.0767	.013367	....	....	
18, 500	74, 000	.1033	.0266	....	....	
18, 850	75, 400	.1600	.0567	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	75, 400
Elastic limit per square inch of original section	do	41, 000
Elongation per inch after rupture	inch	0. 2467
Elongation per inch under strain at elastic limit	do	.001300
Reduction in diameter at point of rupture	do	.184
Reduction in area after rupture, per centum of original section		54. 6
Position of rupture		″.90 from neck
Character of broken surface		silky
Elongation of inch sections		″.44*, ″.16, ″.14

No. 2363.

Marks, $\overset{8}{\mathrm{M}}\,\overset{\mathrm{T}*}{\mathrm{T}_6}\,\mathrm{O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000200	.000100	0.	....	
3,750	15,000	.000333	.000133	0.	....	
5,000	20,000	.000567	.000234	0.	....	
6,250	25,000	.000733	.000166	0.	....	
7,500	30,000	.000900	.000167	0.	....	
8,750	35,000	.001033	.000133	0.	....	
10,000	40,000	.001267 .003838	.000234 .002566	.000067	.000067	Elastic limit.
10,250	41,000	.005267	.001434	....	....	
10,500	42,000	.007333	.002066	....	....	
10,750	43,000	.008164	.000834	....	....	
11,000	44,000	.009333	.001166	....	....	
11,250	45,000	.010133	.000800	....	....	
11,500	46,000	.011500	.001367	....	....	
11,750	47,000	.012700	.001200	....	....	
12,000	48,000	.014000	.001300	....	....	
12,250	49,000	.015000	.001000	....	....	
12,500	50,000	.017060	.002000	....	....	
13,000	52,000	.019667	.002667	....	....	
13,500	54,000	.023000	.003333	....	....	
14,000	56,000	.026367	.003367	....	....	
14,500	58,000	.029933	.003566	....	....	
15,000	60,000	.034000	.004067	....	....	
15,500	62,000	.039167	.005167	....	....	
16,000	64,000	.045000	.005833	....	....	
16,500	66,000	.052167	.007167	....	....	
17,000	68,000	.060000	.007833	....	....	
17,500	70,000	.0767	.0167	....	....	
18,000	72,000	.0933	.0166	....	....	
18,500	74,000	.1567	.0634	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	74,000
Elastic limit per square inch of original section	do...	40,000
Elongation per inch after rupture	inch..	0.2367
Elongation per inch under strain at elastic limit	do...	.001267
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section		52.2
Position of rupture		1″.5 from neck
Character of broken surface		silky
Elongation of inch sections		″.11, ″.32*, ″.28

No. 2362.

Marks, $^{8\,T\ast}_{M\,T_5\,I}$
Diameter, ''.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000500	.000167	0.	....	
5, 000	20, 000	.000667	.000167	0.	....	
6, 250	25, 000	.000833	.000166	0.	....	
7, 500	30, 000	.000967	.000134	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
10, 000	40, 000	.001267	.000134	0.	....	
10, 250	41, 000	.001300	.000033	....	....	Elastic limit.
10, 500	42, 000	.002667	.001367	....	....	
10, 750	43, 000	.005400	.002733	....	....	
11, 000	44, 000	.008000	.002600	....	....	
11, 250	45, 000	.008667	.000667	....	....	
11, 500	46, 000	.009900	.001233	....	....	
11, 750	47, 000	.011000	.001100	....	....	
12, 000	48, 000	.012333	.001333	....	....	
12, 250	49, 000	.013333	.001000	....	....	
12, 500	50, 000	.014667	.001334	....	....	
13, 000	52, 000	.017500	.002833	....	....	
13, 500	54, 000	.020667	.003167	....	....	
14, 000	56, 000	.024167	.003500	....	....	
14, 500	58, 000	.027000	.002833	....	....	
15, 000	60, 000	.031000	.004000	....	....	
15, 500	62, 000	.035667	.004667	....	....	
16, 000	64, 000	.040667	.005000	....	....	
16, 500	66, 000	.046500	.005833	....	....	
17, 000	68, 000	.054000	.007500	....	....	
17, 500	70, 000	.063333	.009333	....	....	
18, 000	72, 000	.0767	.013367	....	....	
18, 500	74, 000	.1033	.0266	....	....	
18, 850	75, 400	.1600	.0567	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	75, 400
Elastic limit per square inch of original section	do	41, 000
Elongation per inch after rupture	inch	0. 2467
Elongation per inch under strain at elastic limit	do	.001300
Reduction in diameter at point of rupture	do	.184
Reduction in area after rupture, per centum of original section		54. 6
Position of rupture		''.90 from neck
Character of broken surface		silky
Elongation of inch sections		''.44*, ''.16, ''.14

No. 2363.

Marks, $\overset{8\ T*}{M\ T_{6}\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000200	.000100	0.	....	
3,750	15,000	.000333	.000133	0.	....	
5,000	20,000	.000567	.000234	0.	....	
6,250	25,000	.000733	.000166	0.	....	
7,500	30,000	.000900	.000167	0.	....	
8,750	35,000	.001033	.000133	0.	....	
10,000	40,000	.001267 .003833	.000234 .002566	.000067	.000067	Elastic limit.
10,250	41,000	.005267	.001434	....	....	
10,500	42,000	.007333	.002066	....	....	
10,750	43,000	.008164	.000834	....	....	
11,000	44,000	.009333	.001166	....	....	
11,250	45,000	.010133	.000800	....	....	
11,500	46,000	.011500	.001367	....	....	
11,750	47,000	.012700	.001200	....	....	
12,000	48,000	.014000	.001300	....	....	
12,250	49,000	.015000	.001000	....	....	
12,500	50,000	.017060	.002000	....	....	
13,000	52,000	.019667	.002667	....	....	
13,500	54,000	.023000	.003333	....	....	
14,000	56,000	.026367	.003367	....	....	
14,500	58,000	.029933	.003566	....	....	
15,000	60,000	.034000	.004067	....	....	
15,500	62,000	.039167	.005167	....	....	
16,000	64,000	.045000	.005833	....	....	
16,500	66,000	.052167	.007167	....	....	
17,000	68,000	.060000	.007833	....	....	
17,500	70,000	.0767	.0167	....	....	
18,000	72,000	.0933	.0166	....	....	
18,500	74,000	.1567	.0634	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	74,000
Elastic limit per square inch of original section	do...	40,000
Elongation per inch after rupture	inch..	0.2367
Elongation per inch under strain at elastic limit	do...	.001267
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section		52.2
Position of rupture		1″.5 from neck
Character of broken surface		silky
Elongation of inch sections		″.11, ″.32*, ″.28

No. 2364.

Marks, $\underset{\text{M}}{}\overset{8}{}\,\overset{\text{T}_{\text{x}}}{\text{T}},\text{M}$
Diameter, ″.564.
Sectional area, .25 square inch.

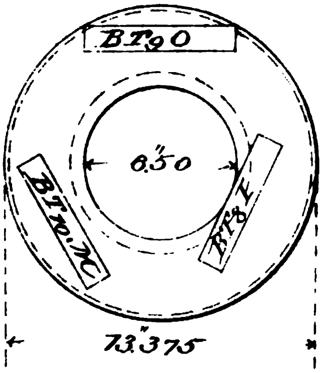
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000233	.000133	0.	....	
3, 750	15, 000	.000400	.000167	0.	....	
5, 000	20, 000	.000600	.000200	0.	....	
6, 250	25, 000	.000800	.000200	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001067	.000100	0.	....	
10, 000	40, 000	.001200	.000133	0.	....	Elastic limit.
10, 250	41, 000	.001367	.000167	....	....	
10, 500	42, 000	.001467	.000100	....	....	
10, 750	43, 000	.004367	.002900	....	....	
11, 000	44, 000	.006400	.002033	....	....	
11, 250	45, 000	.007367	.000967	....	....	
11, 500	46, 000	.008500	.001133	....	....	
11, 750	47, 000	.009667	.001167	....	....	
12, 000	48, 000	.010800	.001133	....	....	
12, 250	49, 000	.012000	.001200	....	....	
12, 500	50, 000	.013333	.001333	....	....	
13, 000	52, 000	.015667	.002334	....	....	
13, 500	54, 000	.018833	.003166	....	....	
14, 000	56, 000	.021667	.002834	....	....	
14, 500	58, 000	.025133	.003466	....	....	
15, 000	60, 000	.029000	.093867	....	....	
15, 500	62, 000	.033000	.004000	....	....	
16, 000	64, 000	.038000	.005000	....	....	
16, 500	66, 000	.042667	.004667	....	....	
17, 000	68, 000	.050000	.007333	....	....	
17, 500	70, 000	.058333	.008333	....	....	
18, 000	72, 000	.070000	.011667	....	....	
18, 500	74, 000	.0900	.0200	....	....	
19, 000	76, 000	.1333	.0433	....	....	
19, 050	76, 200	.1667	.0334	....	....	Tensile strength.

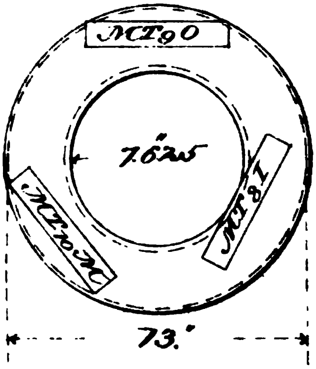
General summary.

Tensile strength per square inch of original section	pounds..	76, 200
Elastic limit per square inch of original section	do...	40, 000
Elongation per inch after rupture	inch..	0. 2567
Elongation per inch under strain at elastic limit	do...	.001200
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.40*, ″.21, ″.16

New Tube No. 26 8" converted Rifle

Additional specimens





No. 2594.

Marks, $\overset{8\,T_{38}}{B\,T_{8}\,I}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000232	.000133	0.	....	
3,750	15,000	.000400	.000167	0.	....	
5,000	20,000	.000600	.000200	0.	....	
6,250	25,000	.000800	.000200	0.	....	
7,500	30,000	.000933	.000133	0.	....	
8,750	35,000	.001100	.000167	....	....	
10,000	40,000	.001267	.000167	....	....	
10,250	41,000	.001333	.000066	....	....	
10,500	42,000	.001400	.000067	....	....	
10,750	43,000	.001467	.000067	....	....	Elastic limit.
11,000	44,000	.007500	.006033	....	....	
11,250	45,000	.008667	.001167	....	....	
11,500	46,000	.009833	.001166	....	....	
11,750	47,000	.011367	.001534	....	....	
12,000	48,000	.012333	.000966	....	....	
12,250	49,000	.013667	.001334	....	....	
12,500	50,000	.014833	.001166	....	....	
13,000	52,000	.017500	.002667	....	....	
13,500	54,000	.020400	.002900	....	....	
14,000	56,000	.023333	.002933	....	....	
14,500	58,000	.027067	.003734	....	....	
15,000	60,000	.031333	.004266	....	....	
15,500	62,000	.036667	.005334	....	....	
16,000	64,000	.039733	.003066	....	....	
16,500	66,000	.0500	.010267	....	....	
17,000	68,000	.0600	.0100	....	....	
17,500	70,000	.0667	.0067	....	....	
18,000	72,000	.0733	.0066	....	....	
18,500	74,000	.0933	.0200	....	....	
19,000	76,000	.1333	.0400	....	....	
19,050	76,200	.1633	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76,200
Elastic limit per square inch of original section	do...	43,000
Elongation per inch after rupture	inch..	0.2433
Elongation per inch under strain at elastic limit	do...	.001467
Reduction in diameter at point of rupture	do...	.194
Reduction in area after rupture, per centum of original section		57.0
Position of rupture		1″.20 from neck
Character of broken surface		fine, silky
Elongation of inch sections		″.35*, ″.28, ″.12

No. 2595.

Marks, $\frac{8\ T_{26}}{B\ T_9\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.		
2, 500	10, 000	.000267	.000167	0.		
3, 750	15, 000	.000433	.000166	0.		
5, 000	20, 000	.000600	.000167	0.		
6, 250	25, 000	.000767	.000167	0.		
7, 500	30, 000	.000933	.000166	0.		
8, 750	35, 000	.001100	.000167	0.		
10, 000	40, 000	.001267	.000167			
10 250	41, 000	.001333	.000066			
10, 500	42, 000	.001400	.000067			
10, 750	43, 000	.001467	.000067			Elastic limit.
11, 000	44, 000	.001667	.000200			
11, 250	45, 000	.008200	.006533			
11, 500	46, 000	.009567	.001367			
11, 750	47, 000	.010067	.000500			
12, 000	48, 000	.011500	.001433			
12, 250	49, 000	.012667	.001167			
12, 500	50, 000	.014367	.001700			
13, 000	52, 000	.016533	.002166			
13, 500	54, 000	.019000	.002467			
14, 000	56, 000	.022500	.003500			
14, 500	58, 000	.025333	.002833			
15, 000	60, 000	.029167	.003834			
15, 500	62, 000	.033333	.004166			
16, 000	64, 000	.036667	.003334			
16, 500	66, 000	.042067	.005400			
17, 000	68, 000	.0500	.007933			
17, 500	70, 000	.0567	.0067			
18, 000	72, 000	.0667	.0100			
18, 500	74, 000	.0767	.0100			
19, 000	76, 000	.1000	.0233			
19, 450	77, 800	.1633	.0633			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	77, 800
Elastic limit, per square inch of original section	do ..	43, 000
Elongation per inch after rupture	inch..	0. 2633
Elongation per inch under strain at elastic limit	do...	.001467
Reduction in diameter at point of rupture	do...	.204
Reduction in area after rupture, per centum of original section		59. 3
Position of rupture		″.05 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.15, ″.47*, ″.17

No. 2596.

Marks, $\overset{8\,T_{\text{[illegible]}}}{B\,T_{10}\,M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	000167	0.	....	
3, 750	15, 000	.000533	.000233	0.	....	
5, 000	20, 000	.000700	.000167	0.	....	
6, 250	25, 000	.000900	.000200	0.	....	
7, 500	30, 000	.001033	.000133	0.	....	
8, 750	35, 000	.001200	.000167	0.	....	
10, 000	40, 000	.001367	.000167	....	....	
10, 250	41, 000	.001467	.000100	....	....	
10, 500	42, 000	.001533	.000066	....	....	Elastic limit.
10, 750	43, 000	.001667	.000134	....	....	
11, 000	44, 000	.007333	.005666	....	....	
11, 250	45, 000	.008700	.001367	....	....	
11, 500	46, 000	.009667	.000967	....	....	
11, 750	47, 000	.010400	.000733	....	....	
12, 000	48, 000	.011433	.001033	....	....	
12, 250	49, 000	.012367	.000934	....	....	
12, 500	50, 000	.013567	.001200	....	....	
13, 000	52, 000	.016000	.002433	....	....	
13, 500	54, 000	.019333	.003333	....	....	
14, 000	56, 000	.022500	.003167	....	....	
14, 500	58, 000	.025067	.002567	....	....	
15, 000	60, 000	.028167	.003100	....	....	
15, 500	62, 000	.032667	.004500	....	....	
16, 000	64, 000	.037667	.005000	....	....	
16, 500	66, 000	.042667	.005000	....	....	
17, 000	68, 000	.047500	.004833	....	....	
17, 500	70, 000	.0567	.0092	....	....	
18, 000	72, 000	.0667	.0100	....	....	
18, 500	74, 000	.0767	.0100	....	....	
19, 000	76, 000	.0933	.0166	....	....	
19, 500	78, 000	.1567	.0634	....	....	
19, 520	78, 080	.1733	.0166	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	78, 080
Elastic limit per square inch of original section	do...	42, 000
Elongation per inch after rupture	inch..	0. 2700
Elongation per inch under strain at elastic limit	do...	.001533
Reduction in diameter at point of rupture	do...	.194
Reduction in area after rupture, per centum of original section		57. 0
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		″.17, ″.47*, ″.17

No. 2597.

Marks, $\genfrac{}{}{0pt}{}{8\ T_{38}}{M\ T_{3}\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000433	.000133	0.	....	
5, 000	20, 000	.000633	.000200	0.	....	
6, 250	25, 000	.000767	.000134	0.	....	
7. 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001110	.000167	0.	....	
10, 000	40, 000	.001233	.000133	....	....	
10, 250	41, 000	.001300	.000067	....	....	
10, 500	42, 000	.001367	.000067	....	....	
10, 750	43, 000	.001400	.000033	....	....	
11, 000	44, 000	.001433	.000033	....	....	Elastic limit.
11, 250	45, 000	.001632	.000200	....	....	
11, 500	46, 000	.002100	.000467	....	....	
11, 750	47, 000	.002767	.000667	....	....	
12, 000	48, 000	.003900	.001133	....	....	
12, 250	49, 000	.005064	.001167	....	....	
12, 500	50, 000	.006667	.001600	....	....	
13, 000	52, 000	.008833	.002166	....	....	
13, 500	54, 000	.011000	.002167	....	....	
14, 000	56, 000	.013033	.002033	....	....	
14, 500	58, 000	.015667	.002634	....	....	
15, 000	60, 000	.018000	.002333	....	....	
15, 500	62, 000	.021167	.003167	....	....	
16, 000	64, 000	.024333	.003166	....	....	
16, 500	66, 000	.026833	.002500	....	....	
17, 000	68, 000	.030667	.003834	....	....	
17, 500	70, 000	.034500	.003833	....	....	
18, 000	72, 000	.038000	.003500	....	....	
18, 500	74, 000	.043100	.005100	....	....	
19, 000	76, 000	.0533	.0102	....	....	
19, 500	78, 000	.0633	.0100	....	....	
20, 000	80, 000	.0700	.0067	....	....	
20, 500	82, 000	.0867	.0167	....	....	
20, 900	83, 600	.1267	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section .... pounds..	83, 600
Elastic limit per square inch of original section .... do...	44, 000
Elongation per inch after rupture .... inch..	0. 1867
Elongation per inch under strain at elastic limit .... do...	.001433
Reduction in diameter at point of rupture .... do...	.164
Reduction in area after rupture, per centum of original section	49. 7
Position of rupture	″.95 from neck
Character of broken surface	silky
Elongation of inch sections	″.32*, ″.13, ″.11

No. 2598.

Marks, $\frac{8\ \text{T}_{26}}{\text{M T, O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000533	.000200	0.	....	
5, 000	20, 000	.000700	.000167	0.	....	
6, 250	25, 000	.000867	.000167	0.	....	
7, 500	30, 000	.001033	.000166	0.	....	
8, 750	35, 000	.001233	.000200	0.	....	
10, 000	40, 000	.001433	.000200	....	....	
10, 250	41, 000	.001500	.000067	....	....	
10, 500	42, 000	.001567	.000067	....	....	Elastic limit.
10, 750	43, 000	.002167	.000600	....	....	
11, 000	44, 000	.003733	.001566	....	....	
11, 250	45, 000	.005400	.001667	....	....	
11, 500	46, 000	.006567	.001167	....	....	
11, 750	47, 000	.007333	.000766	....	....	
12, 000	48, 000	.008500	.001167	....	....	
12, 250	49, 000	.009000	.000500	....	....	
12, 500	50, 000	.010333	.001333	....	....	
13, 000	52, 000	.012500	.002167	....	....	
13, 500	54, 000	.015167	.002667	....	....	
14, 000	56, 000	.017333	.002166	....	....	
14, 500	58, 000	.019667	.002334	....	....	
15, 000	60, 000	.022667	.003000	....	....	
15, 500	62, 000	.026000	.003333	....	....	
16, 000	64, 000	.029000	.003000	....	....	
16, 500	66, 000	.032333	.003333	....	....	
17, 000	68, 000	.036500	.004167	....	....	
17, 500	70, 000	.040833	.004333	....	....	
18, 000	72, 000	.0467	.005867	....	....	
18, 500	74, 000	.0533	.0066	....	....	
19, 000	76, 000	.0633	.0100	....	....	
19, 500	78, 000	.0733	.0100	....	....	
20, 000	80, 000	.0900	.0167	....	....	
20, 440	81, 760	.1367	.0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	81, 760
Elastic limit per square inch of original section	do...	42, 000
Elongation per inch after rupture	inch..	0. 2233
Elongation per inch under strain at elastic limit	do...	.001567
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		″.11, ″.42*, ″.14

No. 2599.

Marks, $\overset{8\ T_{38}}{M\ T_{10}\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000233	.000133	0.	....	
3,750	15,000	.000400	.000167	0.	....	
5,000	20,000	.000500	.000100	0.	....	
6,250	25,000	.000667	.000167	0.	....	
7,500	30,000	.000867	.000200	0.	....	
8,750	35,000	.001067	.000200	0.	....	
10,000	40,000	.001267	.000200	....	....	
10,250	41,000	.001333	.000066	....	....	
10,500	42,000	.001400	.000067	....	....	Elastic limit.
10,750	43,000	.001867	.000467	....	....	
11,000	44,000	.002967	.001100	....	....	
11,250	45,000	.003733	.000766	....	....	
11,500	46,000	.004367	.000634	....	....	
11,750	47,000	.005700	.001333	....	....	
12,000	48,000	.006833	.001133	....	....	
12,250	49,000	.008200	.001367	....	....	
12,500	50,000	.009533	.001333	....	....	
13,000	52,000	.011667	.002134	....	....	
13,500	54,000	.014033	.002366	....	....	
14,000	56,000	.016333	.002300	....	....	
14,500	58,000	.018833	.002500	....	....	
15,000	60,000	.021500	.002667	....	....	
15,500	62,000	.024500	.003000	....	....	
16,000	64,000	.027667	.003167	....	....	
16,500	66,000	.031333	.003666	....	....	
17,000	68,000	.035000	.003667	....	....	
17,500	70,000	.039167	.004167	....	....	
18,000	72,000	.044667	.005500	....	....	
18,500	74,000	.0533	.008633	....	....	
19,000	76,000	.0633	.0100	....	....	
19,500	78,000	.0700	.0067	....	....	
20,000	80,000	.0933	.0233	....	....	
20,410	81,640	.1333	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	81,640
Elastic limit per square inch of original section	do...	42,000
Elongation per inch after rupture	inch..	0.2267
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.154
Reduction in area after rupture, per centum of original section		47.2
Position of rupture		″.05 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.11 ″.38* ″.19

No. 2487.

Marks, $\overset{8\ T_{w}}{B\ T_{1}\ I}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	. 000133	. 000133	0.	....	
2, 500	10, 000	. 000300	. 000167	0.	....	
3, 750	15, 000	. 000467	. 000167	0.	....	
5, 000	20, 000	. 000633	. 000166	0.	....	
6, 250	25, 000	. 000800	. 000167	0.	....	
7, 500	30, 000	. 000933	. 000133	0.	....	
8, 750	35, 000	. 001100	. 000167	....	....	
9, 000	36, 000	. 001133	. 000033	....	....	
9, 250	37, 000	. 001167	. 000034	....	....	Elastic limit.
9, 500	38, 000	. 012133	. 010966	....	....	
9, 750	39, 000	. 012667	. 000534	....	....	
10, 000	40, 000	. 013567	. 000900	....	....	
10, 250	41, 000	. 014200	. 000633	....	....	
10, 500	42, 000	. 015567	. 001367	....	....	
10, 750	43, 000	. 016667	. 001100	....	....	
11, 000	44, 000	. 018500	. 001833	....	....	
11, 250	45, 000	. 019667	. 001167	....	....	
11, 500	46, 000	. 021600	. 001933	....	....	
11, 750	47, 000	. 023033	. 001433	....	....	
12, 000	48, 000	. 025000	. 001967	....	....	
12, 250	49, 000	. 026333	. 001333	....	....	
12, 500	50, 000	. 028333	. 002000	....	....	
13, 000	52, 000	. 032500	. 004167	....	....	
13, 500	54, 000	. 038000	. 005500	....	....	
14, 000	56, 000	. 043100	. 005100	....	....	
14, 500	58, 000	. 049667	. 006567	....	....	
15, 000	60, 000	. 057500	. 007833	....	....	
15, 500	62, 000	. 0667	. 0092	....	....	
16, 000	64, 000	. 0800	. 0133	....	....	
16, 500	66, 000	. 0967	. 0167	....	....	
17, 000	68, 000	. 1333	. 0366	....	....	
17, 180	68, 720	. 1800	. 0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	68, 720
Elastic limit per square inch of original section	do...	37, 000
Elongation per inch after rupture	inch..	0. 2433
Elongation per inch under strain at elastic limit	do...	. 001167
Reduction in diameter at point of rupture	do..	. 085
Reduction in area after rupture, per centum of original section		27. 6
Position of rupture		1″.24 from neck
Character of broken surface, granular; flaky spot at circumference; opened numerous cracks in surface of stem.		
Elongation of inch sections		″.22, ″.31*, ″.20

No. 2488.

Marks, $\overset{8\,T_{27}}{B\,T_2\,O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	—.000067	—.000067	
2, 500	10, 000	.000233	.000133	—.000067	0.	
3, 750	15, 000	.000367	.000134	—.000067	0.	
5, 000	20, 000	.000500	.000133	—.000100	—.000033	
6, 250	25, 000	.000667	.000167	—.000100	0.	
7, 500	30, 000	.000800	.000133	—.000133	—.000033	
8, 750	35, 000	.001000	.000200	....	....	
9, 000	36, 000	.001067	.000067	....	....	
9, 250	37, 000	.001100	.000033	....	....	
9, 500	38, 000	.001133	.000033	....	....	
9, 750	39, 000	.001167	.000034	....	....	Elastic limit.
10, 000	40, 000	.012333	.011166	....	....	
10, 250	41, 000	.012833	.000500	....	....	
10, 500	42, 000	.013333	.000500	....	....	
10, 750	43, 000	.014100	.000767	....	....	
11, 000	44, 000	.015667	.001567	....	....	
11, 250	45, 000	.016900	.001233	....	....	
11, 500	46, 000	.018167	.001267	....	....	
11, 750	47, 000	.019567	.001400	....	....	
12, 000	48, 000	.021000	.001433	....	....	
12, 250	49, 000	.022167	.001167	....	....	
12, 500	50, 000	.024000	.001833	....	....	
13, 000	52, 000	.027867	.003867	....	....	
13, 500	54, 000	.031667	.003800	....	....	
14, 000	56, 000	.035667	.004000	....	....	
14, 500	58, 000	.040400	.004733	....	....	
15, 000	60, 000	.046667	.006267	....	....	
15, 500	62, 000	.052333	.005666	....	....	
16, 000	64, 000	.059667	.007334	....	....	
16, 500	66, 000	.0700	.010333	....	....	
17, 000	68, 000	.0833	.0133	....	....	
17, 500	70, 000	.1033	.0200	....	....	
18, 000	72, 000	.1600	.0567	....	....	
18, 020	72, 080	.1900	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	72, 080
Elastic limit per square inch of original section	do...	39, 000
Elongation per inch after rupture	inch..	0. 2700
Elongation per inch under strain at elastic limit	do...	.001167
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		″.17, ″.45*, ″.19

No. 2489.

Marks, $^{8\,T_{7}}_{B\,T_{3}\,M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000700	.000200	0.	....	
6,250	25,000	.000867	.000167	0.	....	
7,500	30,000	.001000	.000133	.000033	.000033	
8,750	35,000	.001100	.000100	....	....	
9,000	36,000	.001167	.000067	....	....	
9,250	37,000	.001300	.000133	....	....	
9,500	38,000	.001333	.000033	....	....	
9,750	39,000	.001433	.000100	....	....	Elastic limit.
10,000	40,000	.008367	.006934	....	....	
10,250	41,000	.009000	.000633	....	....	
10,500	42,000	.010167	.001167	....	....	
10,750	43,000	.011033	.000866	....	....	
11,000	44,000	.012667	.001634	....	....	
11,250	45,000	.014000	.001333	....	....	
11,500	46,000	.015267	.001267	....	....	
11,750	47,000	.016167	.000900	....	....	
12,000	48,000	.017700	.001533	....	....	
12,250	49,000	.019000	.001300	....	....	
12,500	50,000	.020700	.001700	....	....	
13,000	52,000	.024000	.003300	....	....	
13,500	54,000	.027700	.003700	....	....	
14,000	56,000	.031400	.003700	....	....	
14,500	58,000	.036000	.004600	....	....	
15,000	60,000	.041167	.005167	....	....	
15,500	62,000	.046667	.005500	....	....	
16,00	64,000	.054000	.007333	....	....	
16,500	66,000	.0667	.0127	....	....	
17,000	68,000	.0767	.0100	....	....	
17,500	70,000	.1033	.0266	....	....	
18,000	72,000	.1600	.0567	....	....	
18,020	72,080	.1733	.0133	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	72,080
Elastic limit per square inch of original section	do...	39,000
Elongation per inch after rupture	inch..	0.2867
Elongation per inch under strain at elastic limit	do...	.001433
Reduction in diameter at point of rupture	do...	.184
Reduction in area after rupture, per centum of original section		54.6
Position of rupture		1″.65 from neck
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		″.17, ″.49*, ″.20

No. 2490.

Marks, $\overset{8}{\text{M}}\,\overset{\text{T}_{w}}{\text{T}_{1}}\,\text{I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000433	.000133	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	·000933	.000166	0.	....	
8, 750	35, 000	.001100	.000167	....	....	
9, 000	36, 000	.001133	.000033	....	....	
9, 250	37, 000	.001200	.000067	....	....	
9, 500	38, 000	.001233	.000033	....	....	
9, 750	39, 000	.001300	.000067	....	....	Elastic limit.
10, 000	40, 000	.004067	.002767	....	....	
10, 250	41, 000	.006667	.002600	....	....	
10, 500	42, 000	.008000	.001333	....	....	
10, 750	43, 000	.009000	.001000	....	....	
11, 000	44, 000	.009933	.000933	....	....	
11, 250	45, 000	.010667	.000734	....	....	
11, 500	46, 000	.012333	.001666	....	....	
11, 750	47, 000	.013333	.001000	....	....	
12, 000	48, 000	.014500	.001167	....	....	
12. 250	49, 000	.015423.	.000933	....	....	
12, 500	50, 000	.017067	.001634	....	....	
13, 000	52, 000	.019733	.002666	....	....	
13, 500	54, 000	.022667	.002934	....	....	
14, 000	56, 000	.026000	.003333	....	....	
14, 500	58, 000	.029333	.003333	....	....	
15, 000	60, 000	.033167	.003834	....	....	
15, 500	62, 000	.037667	.004500	....	....	
16, 000	64, 000	.041667	.004000	....	....	
16, 500	66, 000	.049000	.007333	....	....	
17, 000	68, 000	.056333	.007333	....	....	
17, 500	70, 000	.0667	.010367	....	....	
18, 000	72, 000	.0767	.0100	....	....	
18, 500	74, 000	.1000	.0233	....	....	
18, 880	75, 520	.1433	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	75, 520
Elastic limit per square inch of original section	do...	39, 000
Elongation per inch after rupture	inch..	0. 2300
Elongation per inch under strain at elastic limit	do...	.001300
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section	.	49. 7
Position of rupture		1″.4 from neck
Character of broken surface		silky
Elongation of inch sections		″.21, ″.35*, ″.13

No. 2491.

Marks, $\overset{8\ T_{37}}{M\ T_{1}\ O}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000233	.000133	0.	....	
3, 750	15, 000	.000400	.000167	0.	....	
5, 000	20, 000	.000567	.000167	0.	....	
6, 250	25, 000	.000733	.000166	0.	....	
7, 500	30, 000	.000900	.000167	0.	....	
8, 750	35, 000	.001033	.000133	....	....	
9, 000	36, 000	.001067	.000034	....	....	
9, 250	37, 000	.001100	.000033	....	....	
9, 500	38, 000	.001133	.000033	....	....	
9, 750	39, 000	.001167	.000034	....	....	
10, 000	40, 000	.001200	.000033	....	....	
10, 250	41, 000	.001233	.000033	....	....	Elastic limit.
10, 500	42, 000	.001400	.000167	....	....	
10, 750	43, 000	.005167	.003767	....	....	
11, 000	44, 000	.006000	.000833	....	....	
11, 250	45, 000	.007333	.001333	....	....	
11, 500	46, 000	.007833	.000500	....	....	
11, 750	47, 000	.008767	.000934	....	....	
12, 000	48, 000	.010333	.001566	....	....	
12, 250	49, 000	.011667	.001334	....	....	
12, 500	50, 000	.012900	.001233	....	....	
13, 000	52, 000	.015833	.002933	....	....	
13, 500	54, 000	.017667	.001834	....	....	
14, 000	56, 000	.020733	.003066	....	....	
14, 500	58, 000	.023500	.002767	....	....	
15, 000	60, 000	.026667	.002167	....	....	
15, 500	62, 000	.030000	.003333	....	....	
16, 000	64, 000	.033833	.003833	....	....	
16, 500	66, 000	.038500	.004667	....	....	
17, 000	68, 000	.043333	.004833	....	....	
17, 500	70, 000	.050000	.006667	....	....	
18, 000	72, 000	.0600	.0100	....	....	
18, 500	74, 000	.0667	.0067	....	....	
19, 000	76, 000	.0800	.0133	....	....	
19, 500	78, 000	.1267	.0467	....	....	
19, 780	79, 120	.1667	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	79, 120
Elastic limit per square inch of original section	do...	41, 000
Elongation per inch after rupture	inch..	0. 2600
Elongation per inch under strain at elastic limit	do...	.001233
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44. 6
Position of rupture		1". 45 from neck
Character of broken surface		silky
Elongation of inch sections		".16, ".42*, ".20

No. 2492.

Marks, $\overset{8\ T,}{M\ T,\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000233	.000133	0.	....	
3,750	15,000	.000433	.000200	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	....	....	
9,000	36,000	.001200	.000100	....	....	
9,250	37,000	.001300	.000100	....	....	
9,500	38,000	.001333	.000033	....	....	
9,750	39,000	.001333	0.	....	....	
10,000	40,000	.001367	.000034	....	....	
10,250	41,000	.001400	.000033	....	....	Elastic limit.
10,500	42,000	.001533	.000133	....	....	
10,750	43,000	.001600	.000067	....	....	
11,000	44,000	.002500	.000900	....	....	
11,250	45,000	.003767	.001267	....	....	
11,500	46,000	.005333	.001566	....	....	
11,750	47,000	.007100	.001767	....	....	
12,000	48,000	.008833	.001733	....	....	
12,250	49,000	.009667	.000834	....	....	
12,500	50,000	.010667	.001000	....	....	
13,000	52,000	.013267	.002600	....	....	
13,500	54,000	.015200	.001933	....	....	
14,000	56,000	.017667	.002467	....	....	
14,500	58,000	.020700	.003033	....	....	
15,000	60,000	.023400	.002700	....	....	
15,500	62,000	.026567	.003167	....	....	
16,000	64,000	.029500	.002933	....	....	
16,500	66,000	.033333	.003833	....	....	
17,000	68,000	.037533	.004200	....	....	
17,500	70,000	.042400	.004867	....	....	
18,000	72,000	.048667	.006267	....	....	
18,500	74,000	.055333	.006666	....	....	
19,000	76,000	.0633	.007967	....	....	
19,500	78,000	.0800	.0167	....	....	
20,000	80,000	.1067	.0267	....	....	
20,200	80,800	.1467	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	80,800
Elastic limit per square inch of original section	do	41,000
Elongation per inch after rupture	inch	0.2200
Elongation per inch under strain at elastic limit	do	.001400
Reduction in diameter at point of rupture	do	.114
Reduction in area after rupture, per centum of original section		36.4
Position of rupture		″.65 from neck
Character of broken surface		silky
Elongation of inch sections		″.38*, ″.17, ″.11

[Additional specimens.]

No. 2636.

Marks, $^{8}\genfrac{}{}{0pt}{}{\text{C. R}_{87}\text{ T}}{\text{B T}_4\text{ I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000467	.000200	0.	....	
5,000	20,000	.000600	.000133	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	....	....	
9,000	36,000	.001167	.000067	....	....	
9,250	37,000	.001200	.000033	....	....	
9,500	38,000	.001233	.000033	....	....	
9,750	39,000	.001267	.000034	....	....	
10,000	40,000	.001300	.000033	....	....	
10,250	41,000	.001333	.000033	....	....	
10,500	42,000	.001433	.000100	....	....	Elastic limit.
10,750	43,000	.002333	.000900	....	....	
11,000	44,000	.003667	.001334	....	....	
11,250	45,000	.005667	.002000	....	....	
11,500	46,000	.007200	.001533	....	....	
11,750	47,000	.008167	.000967	....	....	
12,000	48,000	.009400	.001233	....	....	
12,500	50,000	.011500	.002100	....	....	
13,000	52,000	.013833	.002333	....	....	
13,500	54,000	.016533	.002700	....	....	
14,000	56,000	.019000	.002467	....	....	
14,500	58,000	.022000	.003000	....	....	
15,000	60,000	.025167	.003167	....	....	
15,500	62,000	.028933	.003766	....	....	
16,000	64,000	.032667	.003734	....	....	
16,500	66,000	.037067	.004400	....	....	
17,000	68,000	.042167	.005100	....	....	
17,500	70,000	.0500	.007833	....	....	
18,000	72,000	.0600	.0100	....	....	
18,500	74,000	.0667	.0067	....	....	
19,000	76,000	.0800	.0133	....	....	
19,500	78,000	.1200	.0400	....	....	
19,580	78,320	.1400	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	78,320
Elastic limit per square inch of original section	do...	42,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do...	.001133
Reduction in diameter at point of rupture	do...	.124
Reduction in area after rupture, per centum of original section		39.2
Position of rupture		⅝ inch from neck
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		″.12, ″.15, ″.33*

No. 2637.

Marks, $^{8}\,\substack{\mathrm{Cn\ R_{e}\ T}\\ \mathrm{B\ T_{s}\ O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000233	.000133	0.	....	
3, 750	15, 000	.000400	.000167	0.	....	
5, 000	20, 000	.000567	.000167	0.	....	
6, 250	25, 000	.000733	.000166	0.	....	
7, 500	30, 000	.000900	.000167	0.	....	
8, 750	35, 000	.001100	.000200	....	....	
9, 000	36, 000	.001133	.000033	....	....	
9, 250	37, 000	.001167	.000034	....	....	
9, 500	38, 000	.001233	.000066	....	....	
9, 750	39, 000	.001300	.000067	....	....	Elastic limit.
10, 000	40, 000	.001467	.000167	....	....	
10, 250	41, 000	.003733	.002266	....	....	
10, 500	42, 000	.005333	.001600	....	....	
10, 750	43, 000	.006233	.000900	....	....	
11, 000	44, 000	.007333	.001100	....	....	
11, 250	45, 000	.008233	.000900	....	....	
11, 500	46, 000	.009767	.001534	....	....	
12, 000	48, 000	.011667	.001900	....	....	
12, 500	50, 000	.014500	.002833	....	....	
13, 000	52, 000	.017000	.002500	....	....	
13, 500	54, 000	.019167	.002167	....	....	
14, 000	56, 000	.021800	.002633	....	....	
14, 500	58, 000	.025000	.003200	....	....	
15, 000	60, 000	.028833	.003833	....	....	
15, 500	62, 000	.032667	.003834	....	....	
16, 000	64, 000	.037333	.004666	....	....	
16, 500	66, 000	.0433	.005967	....	....	
17, 000	68, 000	.0533	.0100	....	....	
17, 500	70, 000	.0600	.0067	....	....	
18, 000	72, 000	.0667	.0067	....	....	
18, 500	74, 000	.0767	.0100	....	....	
19, 000	76, 000	.1000	.0233	....	....	
19, 380	77, 520	.1733	.0733	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	77, 520
Elastic limit per square inch of original section	do ..	39, 000
Elongation per inch after rupture	inch..	0. 2667
Elongation per inch under strain at elastic limit	do ..	.001300
Reduction in diameter at point of rupture	do ..	.184
Reduction in area after rupture, per centum of original section		54. 6
Position of rupture		1½ inches from neck
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		″.28, ″.36*, ″.16

No. 2638.

Marks, $^{8\,\mathrm{Cn\,R_{67}\,T}}_{\mathrm{B\,T.\,M}}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000433	.000133	0.	....	
5,000	20,000	.000633	.000200	0.	....	
6,250	25,000	.000767	.000134	0.	....	
7,500	30,000	.000967	.000200	0.	....	
8,750	35,000	.001133	.000166	....	....	
9,000	36,000	.001200	.000067	....	....	
9,250	37,000	.001233	.000033	....	....	
9,500	38,000	.001267	.000034	....	....	
9,750	39,000	.001300	.000033	....	....	
10,000	40,000	.001367	.000067	....	....	Elastic limit.
10,250	41,000	.003667	.002300	....	....	
10,500	42,000	.006500	.002833	....	....	
10,750	43,000	.007433	.000933	....	....	
11,000	44,000	.008467	.001034	....	....	
11,250	45,000	.009433	.000966	....	....	
11,500	46,000	.010433	.001000	....	....	
12,000	48,000	.012600	.002167	....	....	
12,500	50,000	.015200	.002600	....	....	
13,000	52,000	.017833	.002633	....	....	
13,500	54,000	.020267	.002434	....	....	
14,000	56,000	.023000	.002733	....	....	
14,500	58,000	.026167	.003167	....	....	
15,000	60,000	.029567	.003400	....	....	
15,500	62,000	.033333	.003766	....	....	
16,000	64,000	.038000	.004667	....	....	
16,500	66,000	.0433	.0053	....	....	
17,000	68,000	.0500	.0067	....	....	
17,500	70,000	.0600	.0100	....	....	
18,000	72,000	.0667	.0067	....	....	
18,500	74,000	.0833	.0166	....	....	
19,000	76,000	.1067	.0234	....	....	
19,310	77,240	.1633	.0566	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section.......................................pounds..	**77,240**
Elastic limit per square inch of original section..do...	**40,000**
Elongation per inch after rupture..inch .	**0.2567**
Elongation per inch under strain at elastic limit...do...	**.001367**
Reduction in diameter at point of rupture..do...	**.184**
Reduction in area after rupture, per centum of original section..................................	**54.6**
Position of rupture..	**1".50 from neck**
Character of broken surface..	**silky**
Elongation of inch sections...	**".19, ".42,* ".16**

No. 2639

Marks, $^{8}\begin{smallmatrix}\mathrm{Cn\ R\ T}\\ \mathrm{M\ T_4\ I}\end{smallmatrix}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	....	....	
9,000	36,000	.001100	0.	....	....	
9,250	37,000	.001133	.000033	....	....	
9,500	38,000	.001200	.000067	....	....	
9,750	39,000	.001267	.000067	....	....	
10,000	40,000	.001300	.000033	....	....	
10,250	41,000	.001333	.000033	....	....	
10,500	42,000	.001367	.000034	....	....	
10,750	43,000	.001433	.000066	....	....	Elastic limit.
11,000	44,000	.003533	.002100	....	....	
11,250	45,000	.005333	.001800	....	....	
11,500	46,000	.006667	.001334	....	....	
12,000	48,000	.008933	.002266	....	....	
12,500	50,000	.011333	.002400	....	....	
13,000	52,000	.013333	.002000	....	....	
13,500	54,000	.015833	.002500	....	....	
14,000	56,000	.018333	.002500	....	....	
14,500	58,000	.021333	.003000	....	....	
15,000	60,000	.024333	.003000	....	....	
15,500	62,000	.027733	.003400	....	....	
16,000	64,000	.031333	.003600	....	....	
16,500	66,000	.035500	.004167	....	....	
17,000	68,000	.040500	.005000	....	....	
17,500	70,000	.0433	.0028	....	....	
18,000	72,000	.0533	.0100	....	....	
18,500	74,000	.0667	.0134	....	....	
19,000	76,000	.0767	.0100	....	....	
19,500	78,000	.1067	.0300	....	....	
19,600	78,400	.1333	.0266	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	78,400
Elastic limit per square inch of original section	do...	43,000
Elongation per inch after rupture	inch..	0.2033
Elongation per inch under strain at elastic limit	do...	.001433
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		″.85 from neck
Character of broken surface		silky
Elongation of inch sections		″.37*, ″.14, ″.10

No. 2640.

Marks, $^{8\ \mathrm{Cn\ R_s,\ T}}_{\mathrm{M\ T_s\ O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.		
2,500	10,000	.000300	.000167	0.		
3,750	15,000	.000467	.000167	0.		
5,000	20,000	.000633	.000166	0.		
6,250	25,000	.000833	.000200	0.		
7,500	30,000	.001000	.000167	0.		
8,750	35,000	.001167	.000167			
9,000	36,000	.001200	.000033			
9,250	37,000	.001233	.000033			
9,500	38,000	.001267	.000034			
9,750	39,000	.001300	.000033			
10,000	40,000	.001367	.000067			
10,250	41,000	.001400	.000033			
10,500	42,000	.001433	.000033			
10,750	43,000	.001500	.000067			Elastic limit.
11,000	44,000	.001667	.000167			
11,250	45,000	.002333	.000666			
11,500	46,000	.003333	.001000			
11,750	47,000	.005667	.002334			
12,000	48,000	.007333	.001666			
12,250	49,000	.007900	.000567			
12,500	50,000	.009000	.001100			
13,000	52,000	.011200	.002200			
13,500	54,000	.013267	.002067			
14,000	56,000	.015333	.002066			
14,500	58,000	.017833	.002500			
15,000	60,000	.020333	.002500			
15,500	62,000	.023333	.003000			
16,000	64,000	.026000	.002667			
16,500	66,000	.029667	.003667			
17,000	68,000	.033000	.003333			
17,500	70,000	.037500	.004500			
18,000	72,000	.0433	.0058			
18,500	74,000	.0500	.0067			
19,000	76,000	.0567	.0067			
19,500	78,000	.0667	.0100			
20,000	80,000	.0800	.0133			
20,500	82,000	.1067	.0267			
20,610	82,440	.1400	.0333			Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds.. 82,440
Elastic limit per square inch of original section..........do... 43,000
Elongation per inch after rupture..........inch.. 0.1933
Elongation per inch under strain at elastic limit..........do... .001500
Reduction in diameter at point of rupture..........do... .124
Reduction in area after rupture, per centum of original section.......... 39.2
Position of rupture..........¾ inch from neck
Character of broken surface..........granular, 70 per centum; silky, 30 per centum
Elongation of inch sections..........″.12, ″.14, ″.32*

No. 2641.

Marks, $^{\text{8 Cn R}_{87}\text{ T}}_{\text{M T}_6\text{ M}}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001133	.000200	....	....	
9, 000	36, 000	.001167	.000034	....	....	
9, 250	37, 000	.001200	.000033	....	....	
9, 500	38, 000	.001233	.000033	....	....	
9, 750	39, 000	.001300	.000067	....	....	
10, 000	40, 000	.001333	.000033	....	....	
10, 250	41, 000	.001367	.000034	....	....	
10, 500	42, 000	.001400	.000033	....	....	
10, 750	43, 000	.001433	.000033	....	....	Elastic limit.
11, 000	44, 000	.001600	.000167	....	....	
11, 250	45, 000	.002200	.000600	....	....	
11, 500	46, 000	.003733	.001533	....	....	
11, 750	47, 000	.005400	.001667	....	....	
12, 000	48, 000	.006767	.001367	....	....	
12, 250	49, 000	.007667	.000900	....	....	
12, 500	50, 000	.008667	.001000	....	....	
13, 000	52, 000	.010833	.002166	....	....	
13, 500	54, 000	.013500	.002667	....	....	
14, 000	56, 000	.015500	.002000	....	....	
14, 500	58, 000	.017667	.002167	....	....	
15, 000	60, 000	.020333	.002666	....	....	
15, 500	62, 000	.023033	.002700	....	....	
16, 000	64, 000	.026000	.002967	....	....	
16, 500	66, 000	.029333	.003333	....	....	
17, 000	68, 000	.033000	.003667	....	....	
17, 500	70, 000	.037167	.004167	....	....	
18, 000	72, 000	.0433	.006133	....	....	
18, 500	74, 000	.0500	.0067	....	....	
19, 000	76, 000	.0567	.0067	....	....	
19, 500	78, 000	.0667	.0100	....	....	
20, 000	80, 000	.0833	.0166	....	....	
20, 500	82, 000	.1067	.0234	....	....	
20, 570	82, 280	.1300	.0233	....	....	Tensile strength.

General summary.

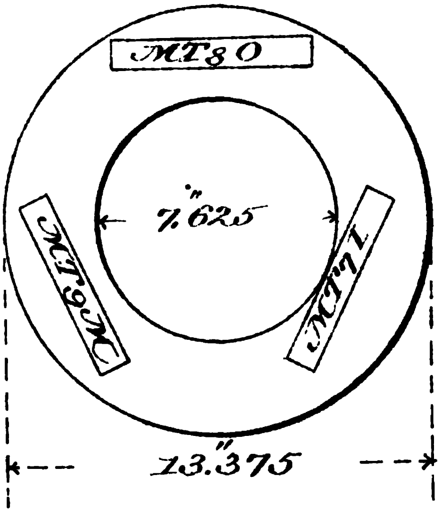
Tensile strength per square inch of original section..............pounds..	82, 280
Elastic limit per square inch of original section..............do...	43, 000
Elongation per inch after rupture..............inch..	0. 1500
Elongation per inch under strain at elastic limit..............do...	.001433
Reduction in diameter at point of rupture..............do...	.064
Reduction in area after rupture, per centum of original section..............	27. 6
Position of rupture..............	".70 from neck

Character of broken surface, granular; dull spot at circumference; opened cracks in surface of stem

Elongation of inch sections..............".21*, ".13, ".11

Tube No. 27 8" converted Rifle

Additional specimens



H Ex 31 49 2

No. 2692.

Marks, $^{8\ R_{7}\ T}_{M\ T_{7}\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

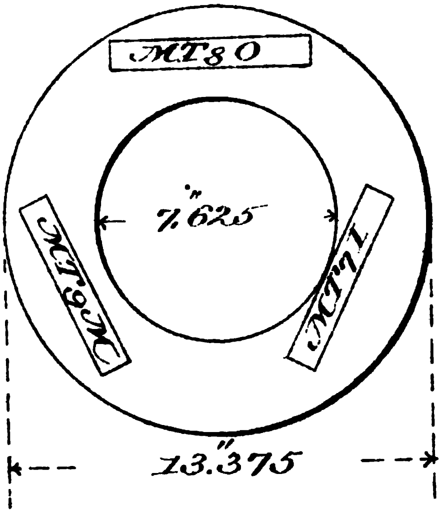
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	. 000167	. 000167	0.	....	
2, 500	10. 000	. 000333	. 000166	0.	....	
3, 750	15, 000	. 000467	. 000134	0.	....	
5, 000	20, 000	. 000633	. 000166	0.	....	
6, 250	25, 000	. 000800	. 000167	0.	....	
7, 500	30, 000	. 001000	. 000200	0.	....	
8, 750	35, 000	. 001167	. 000167	....	....	
9, 000	36, 000	. 001200	. 000033	....	....	
9, 250	37, 000	. 001233	. 000033	....	....	
9, 500	38, 000	. 001267	. 000034	....	....	
9, 750	39, 000	. 001300	. 000033	....	....	
10, 000	40, 000	. 001333	. 000033	....	....	
10, 250	41, 000	. 001367	. 000034	....	....	
10, 500	42, 000	. 001433	. 000066	....	....	Elastic limit.
10, 750	43, 000	. 001600	. 000167	....	....	
11, 000	44, 000	. 001767	. 000167	....	....	
11, 250	45, 000	. 002533	. 000766	....	....	
11, 500	46, 000	. 003733	. 001200	....	....	
11, 750	47, 000	. 005500	. 001767	....	....	
12, 000	48, 000	. 007000	. 001500	....	....	
12, 250	49, 000	. 008000	. 001000	....	....	
12, 500	50, 000	. 009000	. 001000	....	....	
13, 000	52, 000	. 011000	. 002000	....	....	
13, 500	54, 000	. 013000	. 002000	....	....	
14, 000	56, 000	. 015233	. 002233	....	....	
14, 500	58, 000	. 017667	. 002434	....	....	
15, 000	60, 000	. 020267	. 002600	....	....	
15, 500	62, 000	. 023000	. 002733	....	....	
16, 000	64, 000	. 026000	. 003000	....	....	
16, 500	66, 000	. 029267	. 003566	....	....	
17, 000	68, 000	. 032833	. 004500	....	....	
17, 500	70, 000	. 037333	. 004500	....	....	
18, 000	72, 000	. 041833	. 004500	....	....	
18, 500	74, 000	. 0500	. 008167	....	....	
19, 000	76, 000	. 0600	. 0100	....	....	
19, 500	78, 000	. 0667	. 0067	....	....	
20, 000	80, 000	. 0800	. 0133	....	....	
20, 500	82, 000	. 1000	. 0200	....	....	
20, 720	82, 880	. 1467	. 0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	82, 880
Elastic limit per square inch of original section	do...	42, 000
Elongation per inch after rupture	inch..	0. 2267
Elongation per inch under strain at elastic limit	do...	. 001433
Reduction in diameter at point of rupture	do...	. 154
Reduction in area after rupture, per centum of original section		47. 2
Position of rupture		1″.26 from neck
Character of broken surface		silky
Elongation of inch sections		″.26*, ″.29*, ″.13

Tube No. 27 8" converted Rifle

Additional specimens



H Ex 31 49 2

No. 2692.

Marks, $\overset{8\ R_{7}\ T}{M\ T_{7}\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000467	.000134	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.001000	.000200	0.	....	
8, 750	35, 000	.001167	.000167	....	....	
9, 000	36, 000	.001200	.000033	....	....	
9, 250	37, 000	.001233	.000033	....	....	
9, 500	38, 000	.001267	.000034	....	....	
9, 750	39, 000	.001300	.000033	....	....	
10, 000	40, 000	.001333	.000033	....	....	
10, 250	41, 000	.001367	.000034	....	....	
10, 500	42, 000	.001433	.000066	....	....	Elastic limit.
10, 750	43, 000	.001600	.000167	....	....	
11, 000	44, 000	.001767	.000167	....	....	
11, 250	45, 000	.002533	.000766	....	....	
11, 500	46, 000	.003733	.001200	....	....	
11, 750	47, 000	.005500	.001767	....	....	
12, 000	48, 000	.007000	.001500	....	....	
12, 250	49, 000	.008000	.001000	....	....	
12, 500	50, 000	.009000	.001000	....	....	
13, 000	52, 000	.011000	.002000	....	....	
13, 500	54, 000	.013000	.002000	....	....	
14, 000	56, 000	.015233	.002233	....	....	
14, 500	58, 000	.017667	.002434	....	....	
15, 000	60, 000	.020267	.002600	....	....	
15, 500	62, 000	.023000	.002733	....	....	
16, 000	64, 000	.026000	.003000	....	....	
16, 500	66, 000	.029267	.003566	....	....	
17, 000	68, 000	.032833	.004500	....	....	
17, 500	70, 000	.037333	.004500	....	....	
18, 000	72, 000	.041833	.004500	....	....	
18, 500	74, 000	.0500	.008167	....	....	
19, 000	76, 000	.0600	.0100	....	....	
19, 500	78, 000	.0667	.0067	....	....	
20, 000	80, 000	.0800	.0133	....	....	
20, 500	82, 000	.1000	.0200	....	....	
20, 720	82, 880	.1467	.0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	82, 880
Elastic limit per square inch of original section	do...	42, 000
Elongation per inch after rupture	inch..	0. 2267
Elongation per inch under strain at elastic limit	do...	.001433
Reduction in diameter at point of rupture	do...	.154
Reduction in area after rupture, per centum of original section		47. 2
Position of rupture		1″.26 from neck
Character of broken surface		silky
Elongation of inch sections		″.26*, ″.29*, ″.13

No. 2693.

Marks, $\genfrac{}{}{0pt}{}{\text{8 Cn Rr T}}{\text{M T, O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000500	.000167	0.	....	
5, 000	20, 000	.000667	.000167	0.	....	
6, 250	25, 000	.000833	.000166	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
8, 750	35, 000	.001167	.000167	....	....	
9, 000	36, 000	.001200	.000033	....	....	
9, 250	37, 000	.001233	.000033	....	....	
9, 500	38, 000	.001300	.000067	....	....	
9, 750	39, 000	.001367	.000067	....	....	
10, 000	40, 000	.001400	.000033	....	....	
10, 250	41, 000	.001433	.000033	....	....	
10, 500	42, 000	.001500	.000067	....	....	
10, 750	43, 000	.001533	.000033	....	....	
11, 000	44, 000	.001600	.000067	....	....	
11, 250	45, 000	.001667	.000067	....	....	Elastic limit.
11, 500	46, 000	.005333	.003666	....	....	
11, 750	47, 000	.006067	.000734	....	....	
12, 000	48, 000	.007233	.001166	....	....	
12, 250	49, 000	.008167	.000934	....	....	
12, 500	50, 000	.009333	.001166	....	....	
13, 000	52, 000	.010867	.001534	....	....	
13, 500	54, 000	.013333	.002466	....	....	
14, 000	56, 000	.015833	.002500	....	....	
14, 500	58, 000	.018333	.002500	....	....	
15, 000	60, 000	.020700	.002367	....	....	
15, 500	62, 000	.023400	.002700	....	....	
16, 000	64, 000	.026333	.002933	....	....	
16, 500	66, 000	.029833	.003500	....	....	
17, 000	68, 000	.033533	.003700	....	....	
17, 500	70, 000	.038067	.004534	....	....	
18, 000	72, 000	.041667	.003600	....	....	
18, 500	74, 000	.0500	.008333	....	....	
19, 000	76, 000	.0600	.0100	....	....	
19, 500	78, 000	.0667	.0067	....	....	
20, 000	80, 000	.0833	.0166	....	....	
20, 500	82, 000	.1100	.0267	....	....	
20, 680	82, 720	.1567	.0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds.. 82, 720
Elastic limit per square inch of original section..........do... 45, 000
Elongation per inch after rupture..........inch.. 0. 2367
Elongation per inch under strain at elastic limit..........do... .001667
Reduction in diameter at point of rupture..........do... .164
Reduction in area after rupture, per centum of original section.......... 49. 7
Position of rupture.......... ″.90 from neck
Character of broken surface..........silky
Elongation of inch sections.......... ″.38*, ″.19, ″.14

No. 2694.

Marks, $\genfrac{}{}{0pt}{}{8\,\mathrm{Cn\,R_{77}\,T}}{\mathrm{M\,T,\,M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

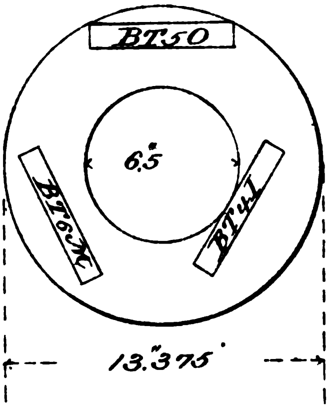
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000533	.000200	0.	....	
5, 000	20, 000	.000700	.000167	0.	....	
6, 250	25, 000	.000867	.000167	0.	....	
7, 500	30, 000	.001033	.000166	0.	....	
8, 750	35, 000	.001200	.000167	....	....	
9, 000	36, 000	.001233	.000033	....	....	
9, 250	37, 000	.001267	.000034	....	....	
9, 500	38, 000	.001300	.000033	....	....	
9, 750	39, 000	.001367	.000067	....	....	
10, 000	40, 000	.001400	.000033	....	....	
10, 250	41, 000	.001500	.000100	....	....	Elastic limit.
10, 500	42, 000	.001633	.000133	....	....	
10, 750	43, 000	.002833	.001200	....	....	
11, 000	44, 000	.006000	.003167	....	....	
11, 250	45, 000	.007167	.001167	....	....	
11, 500	46, 000	.008000	.000833	....	....	
11, 750	47, 000	.008800	.000800	....	....	
12, 000	48, 000	.009833	.001033	....	....	
12, 250	49, 000	.011000	.001167	....	....	
12, 500	50, 000	.011933	.000933	....	....	
13, 000	52, 000	.013900	.001967	....	....	
13, 500	54, 000	.016167	.002267	....	....	
14, 000	56, 000	.018667	.002500	....	....	
14, 500	58, 000	.021367	.002700	....	....	
15, 000	60, 000	.024267	.002900	....	....	
15, 500	62, 000	.027233	.002966	....	....	
16, 000	64, 000	.030933	.003700	....	....	
16, 500	66, 000	.034833	.003900	....	....	
17, 000	68, 000	.039667	.004834	....	....	
17, 500	70, 000	.044733	.005066	....	....	
18, 000	72, 000	.0533	.008567	....	....	
18, 500	74, 000	.0633	.0100	....	....	
19, 000	76, 000	.0733	.0100	....	....	
19, 500	78, 000	.0900	.0167	....	....	
20, 000	80, 000	.1300	.0400	....	....	
20, 050	80, 200	.1533	.0233	....	....	Tensile strength.

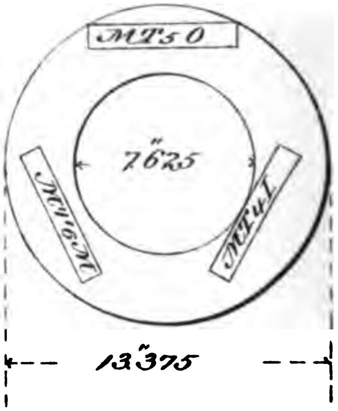
General summary.

Tensile strength per square inch of original section	pounds..	80, 200
Elastic limit per square inch of original section	do...	41, 000
Elongation per inch after rupture	inch..	0. 1600
Elongation per inch under strain at elastic limit	do...	.001500
Reduction in diameter at point of rupture	do...	.054
Reduction in area after rupture, per centum of original section		18. 3
Position of rupture		1″.50 from neck
Character of broken surface		granular; radiating from a flaky spot at circumference
Elongation of inch sections		″.13, ″.20*, ″.15

Tube No. 32 8" converted Rifle

Additional specimens





No. 1683.

Marks, $\overset{8\,\mathrm{T}_{12}}{\mathrm{B}\,\mathrm{T}_{4}\,\mathrm{I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	—.000033	—.000033	
2,500	10,000	.000200	.000100	—.000033	0.	
3,750	15,000	.000300	.000100	—.000033	0.	
5,000	20,000	.000433	.000133	—.000033	0.	
6,250	25,000	.000600	.000167	—.000033	0.	
7,500	30,000	.000800	.000200	—.000033	0.	
8,750	35,000	.000967	.000167	—.000033	0.	
9,000	36,000	.001033	.000066	....	....	
9,250	37,000	.001067	.000034	....	....	
9,500	38,000	.001100	.000033	....	....	Elastic limit.
9,750	39,000	.002367	.001267	....	....	
10,000	40,000	.005133	.002766	.003633	.003666	
10,250	41,000	.005700	.000567	....	....	
10,500	42,000	.006533	.000833	....	....	
10,750	43,000	.007600	.001067	....	....	
11,000	44,000	.008767	.001167	....	....	
11,250	45,000	.009633	.000866	.007933	.004300	
11,500	46,000	.010833	.001200	....	....	
11,750	47,000	.011933	.001100	....	....	
12,000	48,000	.013000	.001067	....	....	
12,250	49,000	.014133	.001233	....	....	
12,500	50,000	.015367	.001264	....	....	
12,750	51,000	.016667	.001300	....	....	
13,000	52,000	.018100	.001433	....	....	
13,250	53,000	.019367	.001267	....	....	
13,500	54,000	.020733	.001366	....	....	
13,750	55,000	.022033	.001300	....	....	
14,000	56,000	.024133	.002100	....	....	
14,250	57,000	.025733	.001600	....	....	
14,500	58,000	.027500	.001767	....	....	
14,750	59,000	.029033	.001533	....	....	
15,000	60,000	.031333	.002300	....	....	
15,500	62,000	.035833	.004500	....	....	
16,000	64,000	.040867	.005034	....	....	
16,500	66,000	.047333	.006466	....	....	
17,000	68,000	.054833	.007500	....	....	
17,500	70,000	.0667	.011867	....	....	
18,000	72,000	.0767	.0100	....	....	
18,500	74,000	.0967	.0200	....	....	
18,990	75,960	.1633	.0666	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	75,960
Elastic limit per square inch of original section	do...	38,000
Elongation per inch after rupture	inch..	0 2600
Elongation per inch under strain at elastic limit	do...	.001100
Reduction in diameter at point of rupture	do...	.134
Reduction in area after rupture, per centum of original section		41.9
Position of rupture		″.60 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.31*, ″.32*, ″.15

No. 1684.

Marks, $\genfrac{}{}{0pt}{}{8\,T_{34}}{B\,T_5\,O}$
Diameter, ".563.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000067	.000067	0.	....	
2,500	10,000	.000267	.000200	0.	....	
3,750	15,000	.000367	.000100	0.	....	
5,000	20,000	.000567	.000200	0.	....	
6,250	25,000	.000767	.000200	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	0.	....	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001167	.000034	....	....	Elastic limit.
9,500	38,000	.002833	.001666	....	....	
9,750	39,000	.005100	.002267	....	....	
10,000	40,000	.006400	.001300	.004933	.004933	
10,250	41,000	.007633	.001233	....	....	
10,500	42,000	.008233	.000600	....	....	
10,750	43,000	.009200	.000967	....	....	
11,000	44,000	.010400	.001200	....	....	
11,250	45,000	.011233	.000833	.009567	.004634	
11,500	46,000	.012500	.001267	....	....	
11,750	47,000	.013033	.000533	....	....	
12,000	48,000	.014333	.001300	....	....	
12,250	49,000	.015300	.000967	....	....	
12,500	50,000	.016667	.001367	....	....	
12,750	51,000	.018000	.001333	....	....	
13,000	52,000	.019500	.001500	....	....	
13,250	53,000	.020667	.001167	....	....	
13,500	54,000	.022333	.001666	....	....	
13,750	55,000	.023500	.001167	....	....	
*14,000	56,000	.025333	.001833	....	....	
14,250	57,000	.026667	.001334	....	....	
14,500	58,000	.028800	.002133	....	....	
14,750	59,000	.030400	.001600	....	....	
15,000	60,000	.032367	.001967	....	....	
15,500	62,000	.037067	.004700	....	....	
16,000	64,000	.042333	.005266	....	....	
16,500	66,000	.048167	.005834	....	....	
17,000	68,000	.058333	.010166	....	....	
17,500	70,000	.0667	.008367	....	....	
18,000	72,000	.0767	.0100	....	....	
18,500	74,000	.1000	.0233	....	....	
18,950	75,800	.1667	.0667	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	75,800
Elastic limit per square inch of original section ....do...	37,000
Elongation per inch after rupture ....inch..	0.2333
Elongation per inch under strain at elastic limit ....do...	.001167
Reduction in diameter at point of rupture ....do...	.123
Reduction in area after rupture, per centum of original section	39.2
Position of rupture	⅜ inch from middle of stem
Character of broken surface	granular; dull spot at circumference
Elongation of inch sections	".20, ".36*, ".14

No. 1685.

Marks, $\substack{8\,T_{32}\\ B\,T_{6}\,M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000333	.000200	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000833	.000166	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001167	.000167	.000033	.000033	
9,000	36,000	.001200	.000033	....	....	
9,250	37,000	.001233	.000033	....	....	
9,500	38,000	.001300	.000067	....	....	Elastic limit.
9,750	39,000	.001400	.000100	....	....	
10,000	40,000	.004533	.003133	....	....	
10,250	41,000	.004900	.000367	....	....	
10,500	42,000	.006233	.001333	....	....	
10,750	43,000	.006900	.000667	....	....	
11,000	44,000	.008000	.001100	....	....	
11,250	45,000	.009033	.001033	.007433	.007400	
11,500	46,000	.009767	.000734	....	....	
11,750	47,000	.010433	.000666	....	....	
12,000	48,000	.011733	.001300	....	....	
12,250	49,000	.012767	.001034	....	....	
12,500	50,000	.013900	.001133	....	....	
12,750	51,000	.015100	.001200	....	....	
13,000	52,000	.016500	.001400	....	....	
13,250	53,000	.017667	.001167	....	....	
13,500	54,000	.019200	.001533	....	....	
13,750	55,000	.020333	.001133	....	....	
14,000	56,000	.022000	.001667	....	....	
14,250	57,000	.023333	.001333	....	....	
14,500	58,000	.025167	.001834	....	....	
14,750	59,000	.026667	.001500	....	....	
15,000	60,000	.028667	.002000	....	....	
15,500	62,000	.032233	.003566	....	....	
16,000	64,000	.036667	.004434	....	....	
16,500	66,000	.042067	.005400	....	....	
17,000	68,000	.048833	.006766	....	....	
17,500	70 000	.056333	.007500	....	....	
18,000	72,000	.066000	.009667	....	....	
18,500	74 000	.0833	.0173	....	....	
19,000	76.000	.1100	.0267	....	....	
19,180	76,720	.1633	.0533	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76,720
Elastic limit per square inch of original section	do...	38,000
Elongation per inch after rupture	inch..	0.2600
Elongation per inch under strain at elastic limit	do...	.001300
Reduction in diameter at point of rupture	do...	.154
Reduction in area after rupture, per centum of original section		47.2
Position of rupture		⅞ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.39*, ″.24, ″.15

No. 1686.

Marks, $\overset{8\,T_{58}}{M\,T_4\,I}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.		
2,500	10,000	.000267	.000134	0.		
3,750	15,000	.000400	.000133	0.		
5,000	20,000	.000633	.000233	0.		
6,250	25,000	.000733	.000100	0.		
7,500	30,000	.000867	.000134	0.		
8,750	35,000	.001033	.000166	0.		
9,000	36,000	.001067	.000034			
9,250	37,000	.001100	.000033			
9,500	38,000	.001133	.000033			
9,750	39,000	.001167	.000033			
10,000	40,000	.001167	0.	0.		
10,250	41,000	.001200	.000033			
10,500	42,000	.001233	.000033			
10,750	43,000	.001267	.000034			
11,000	44,000	.001333	.000066			
11,250	45,000	.001367	.000034	0.		
11,500	46,000	.001433	.000066			
11,750	47,000	.001533	.000100			Elastic limit.
12,000	48,000	.002767	.001234			
12,250	49,000	.004233	.001466			
12,500	50,000	.006700	.002467	.004900	.004900	
12,750	51,000	.007133	.000433			
13,000	52,000	.008000	.000867			
13,250	53,000	.009267	.001267			
13,500	54,000	.010567	.001300			
13,750	55,000	.011700	.001133			
14,000	56,000	.012833	.001133			
14,250	57,000	.013833	.001000			
14,500	58,000	.015367	.001534			
14,750	59,000	.016367	.001000			
15,000	60,000	.017900	.001533			
15,500	62,000	.020800	.002900			
16,000	64,000	.024000	.003200			
16,500	66,000	.027333	.003333			
17,000	68,000	.031333	.004000			
17,500	70,000	.035367	.004034			
18,000	72,000	.040400	.005033			
18,500	74,000	.046833	.006433			
19,000	76,000	.055000	.008167			
19,500	78,000	.066333	.011333			
20,000	80,000	.0900	.023667			
20,290	81,160	.1300	.0400			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	81,160
Elastic limit per square inch of original section	do...	47,000
Elongation per inch after rupture	inch..	0.1483
Elongation per inch under strain at elastic limit	do...	.001533
Reduction in diameter at point of rupture	do...	.064
Reduction in area after rupture, per centum of original section		21.4
Position of rupture		½ inch from middle of stem
Character of broken surface		granular, with belt of dull-colored metal
Elongation of inch sections		".19*, ".15, ".09

No. 1687.

Marks, $\overset{8\ T_{8}}{M\ T_{5}\ O}$.
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000267	.000100	0.	....	
3, 750	15, 000	.000467	.000200	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	.000033	.000033	
10, 000	40, 000	.001267	.000134	.000033	0.	
10, 250	41, 000	.001300	.000033	....	....	
10, 500	42, 000	.001367	.000067	....	....	
10, 750	43, 000	.001433	.000066	....	....	
11, 000	44, 000	.001500	.000067	....	....	
11, 250	45, 000	.001533	.000033	.000133	.000100	Elastic limit.
11, 500	46, 000	.001733	.000200	....	....	
11, 750	47, 000	.002800	.001067	....	....	
12, 000	48, 000	.004833	.002033	....	....	
12, 250	49, 000	.005500	.000667	....	....	
12, 500	50, 000	.006933	.001433	.005133	.005000	
12, 750	51, 000	.007667	.000734	....	....	
13, 000	52, 000	.008533	.000866	....	....	
13, 250	53, 000	.009700	.001167	....	....	
13, 500	54, 000	.010667	.000967	....	....	
13, 750	55, 000	.012000	.001333	....	....	
14, 000	56, 000	.013233	.001233	....	....	
14, 250	57, 000	.014333	.001100	....	....	
14, 500	58, 000	.015433	.001100	....	....	
14, 750	59, 000	.016600	.001167	....	....	
15, 000	60, 000	.018000	.001400	....	....	
15, 500	62, 000	.020667	.002667	....	....	
16, 000	64, 000	.023567	.002900	....	....	
16, 500	66, 000	.026667	.003100	....	....	
17, 000	68, 000	.030333	.003666	....	....	
17, 500	70, 000	.034833	.004500	....	....	
18, 000	72, 000	.039000	.004167	....	....	
18, 500	74, 000	.044667	.005667	....	....	
19, 000	76, 000	.052333	.007666	....	....	
19, 500	78, 000	.061667	.009334	....	....	
20, 000	80, 000	.0767	.015033	....	....	
20, 500	82, 000	.1167	.0400	....	....	
20, 520	82, 080	.1467	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	82, 080
Elastic limit per square inch of original section	do...	45, 000
Elongation per inch after rupture	inch..	0. 2133
Elongation per inch under strain at elastic limit	do...	.001533
Reduction in diameter at point of rupture	do...	.134
Reduction in area after rupture, per centum of original section		41. 9
Position of rupture		¾ inch from middle of stem
Character of broken surface		granular; dull center
Elongation of inch sections		″.16, ″.36*, ″.12

No. 1688.

Marks, $\overset{8\,T_{32}}{M\,T_{6}\,M}$
Diameter, ″.564.
Sectional area, .25 square inch.

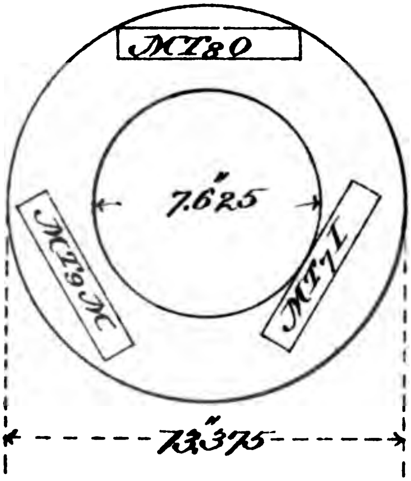
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
10,000	40,000	.001267	.000134	0.	....	
10,250	41,000	.001300	.000033	....	....	
10,500	42,000	.001400	.000100	....	....	Elastic limit.
10,750	43,000	.001633	.000233	....	....	
11,000	44,000	.002167	.000534	....	....	
11,250	45,000	.003733	.001566	.002100	.002100	
11,500	46,000	.005000	.001267	....	....	
11,750	47,000	.005933	.000933	....	....	
12,000	48,000	.007067	.001134	....	....	
12,250	49,000	.008067	.001000	....	....	
12,500	50,000	.009033	.000966	.007100	.005000	
12,750	51,000	.009667	.000634	....	....	
13,000	52,000	.010667	.001000	....	....	
13,250	53,000	.011500	.000833	....	....	
13,500	54,000	.012867	.001367	....	....	
13,750	55,000	.013867	.001000	....	....	
14,000	56,000	.015067	.001200	....	....	
14,250	57,000	.016333	.001266	....	....	
14,500	58,000	.017667	.001334	....	....	
14,750	59,000	.018833	.001166	....	....	
15,000	60,000	.020567	.001734	....	....	
15,500	62,000	.023333	.002766	....	....	
16,000	64,000	.026467	.003134	....	....	
16,500	66,000	.030000	.003533	....	....	
17,000	68,000	.034000	.004000	....	....	
17,500	70,000	.038667	.004667	....	....	
18,000	72,000	.044000	.005333	....	....	
18,500	74,000	.051667	.007667	....	....	
19,000	76,000	.060000	.008333	....	....	
19,500	78,000	.0733	.0133	....	....	
20,000	80,000	.1000	.0267	....	....	
20,190	80,760	.1333	.0333	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80,760
Elastic limit per square inch of original section	do...	42,000
Elongation per inch after rupture	inch..	.01667
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.084
Reduction in area after rupture, per centum of original section		27.6
Position of rupture		″.70 from neck
Character of broken surface		granular; dull-colored spot at circumference
Elongation of inch sections		″.28*, ″.13, ″.09

Tube No. 32 8″ converted Rifle

Additional specimens



H Ex 31 49 2

No. 2347.

Marks, $\overset{8}{\text{M}}\,\overset{\text{T}_{8}}{\text{T}},\text{I}$
Diameter. ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
7,750	31,000	.001000	.000033	....	....	
8,000	32,000	.001033	.000033	....	....	
8,250	33,000	.001100	.000067	....	....	
8,500	34,000	.001167	.000067	....	....	Elastic limit.
8,570	35,000	.007467	.006300	....	....	
9,000	36,000	.009333	.001866	....	....	
9,250	37,000	.010067	.000734	....	....	
9,500	38,000	.011367	.001300	....	....	
9,750	39,000	.012400	.001033	....	....	
10,000	40,000	.013400	.001000	....	....	
10,500	42,000	.015433	.002033	....	....	
11,000	44,000	.017733	.002300	....	....	
11,500	46,000	.020167	.002434	....	....	
12,000	48,000	.022833	.002666	....	....	
12,500	50,000	.026200	.003367	....	....	
13,000	52,000	.029333	.003133	....	....	
13,500	54,000	.033000	.003667	....	....	
14,000	56,000	.036900	.003900	....	....	
14,500	58,000	.041333	.004433	....	....	
15,000	60,000	.046667	.005334	....	....	
15,500	62,000	.053000	.006333	....	....	
16,000	64,000	.060000	.007000	....	....	
16,500	66,000	.0700	.0100	....	....	
17,000	68,000	.0800	.0100	....	....	
17,500	70,000	.0967	.0167	....	....	
18,000	72,000	.1267	.0300	....	....	
18,160	72,640	.1633	.0366	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	72,640
Elastic limit per square inch of original section	do...	34,000
Elongation per inch after rupture	inch..	0.1833
Elongation per inch under strain at elastic limit	do...	.001167
Reduction in diameter at point of rupture	do...	.084
Reduction in area after rupture, per centum of original section		27.6
Position of rupture		§ inch from neck
Character of broken surface		granular; flaky spot near circumference
Elongation of inch sections		".14, ".15, ".26

No. 2348.

Marks, $\overset{8}{\mathrm{M}}\,\overset{\mathrm{T}_8}{\mathrm{T}_8}\,\mathrm{O}$

Diameter, ″.565.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	....	....	
2,500	10,000	.000267	.000167	....	....	
3,750	15,000	.000400	.000133	....	....	
5,000	20,000	.000533	.000133	....	....	
6,250	25,000	.000667	.000134	....	....	
7,500	30,000	.000867	.000200	....	....	
8,750	35,000	.001033	.000166	....	....	
9,000	36,000	.001067	.000034	....	....	
9,250	37,000	.001100	.000033	....	....	
9,500	38,000	.001167 .007667	.000067 .006500	....	....	Elastic limit.
9,750	39,000	.010333	.002666	....	....	
10,000	40,000	.011333	.001000	....	....	
10,500	42,000	.012767	.001434	....	....	
11,000	44,000	.015333	.002566	....	....	
11,500	46,000	.017500	.002167	....	....	
12,000	48,000	.019833	.002333	....	....	
12,500	50,000	.022533	.002700	....	....	
13,000	52,000	.025167	.002634	....	....	
13,500	54,000	.028333	.003166	....	....	
14,000	56,000	.031933	.003600	....	....	
14,500	58,000	.035667	.003734	....	....	
15,000	60,000	.040400	.004733	....	....	
15,500	62,000	.045333	.004933	....	....	
16,000	64,000	.050767	.005434	....	....	
16,500	66,000	.057000	.006233	....	....	
17,000	68,000	.0667	.0097	....	....	
17,500	70,000	.0733	.0066	....	....	
18,000	72,000	.0900	.0167	....	....	
18,500	74,000	.1067	.0167	....	....	
18,960	75,840	.1733	.0666	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 75,840

Elastic limit per square inch of original section. ....do... 38,000

Elongation per inch after rupture ....inch.. 0.2267

Elongation per inch under strain at elastic limit ....do... .001167

Reduction in diameter at point of rupture....................do... .105

Reduction in area after rupture, per centum of original section.................... 33.5

Position of rupture .... 1″.1 from neck

Character of broken surface....................granular; dull spot at circumference

Elongation of inch sections....................″.14, ″.25, ″.29*

No. 2349.

Marks, $\text{M}\ \overset{8\ \text{T}_{32}}{\text{T},}\ \text{M}$

Diameter, ".564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001167	.000234	.000033	.000033	Elastic limit.
9,000	36,000	.006800	.005633	....	....	
9,250	37,000	.009133	.002333	....	....	
9,500	38,000	.010333	.001200	....	....	
9,750	39,000	.011033	.000700	....	....	
10,000	40,000	.012200	.001167	....	....	
10,500	42,000	.014400	.002200	....	....	
11,000	44,000	.016467	.002067	....	....	
11,500	46,000	.018800	.002333	....	....	
12,000	48,000	.021267	.002467	....	....	
12,500	50,000	.024167	.002900	....	....	
13,000	52,000	.027367	.003209	....	....	
13,500	54,000	.030667	.003300	....	....	
14,000	56,000	.034333	.003666	....	....	
14,500	58,000	.038333	.004000	....	....	
15,000	60,000	.043000	.004667	....	....	
15,500	62,000	.048333	.005333	....	....	
16,000	64,000	.055000	.006667	....	....	
16,500	66,000	.062167	.007167	....	....	
17,000	68,000	.0733	.011133	....	....	
17,500	70,000	.0867	.0134	....	....	
18,000	72,000	.1033	.0166	....	....	
18,380	73,520	.1367	.0334	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds.	73,520
Elastic limit per square inch of original section	do...	35,000.
Elongation per inch after rupture	inch..	0.1367
Elongation per inch under strain at elastic limit	do...	.001167
Reduction in diameter at point of rupture	do...	.064
Reduction in area after rupture, per centum of original section		21.4
Position of rupture		".23 from neck
Character of broken surface		granular
Elongation of inch sections		".18, ".15, ".13*

NEW TUBE NO. 32.

No. 2668.

Marks, $\begin{smallmatrix}8\ \mathrm{Cn\ R_8\ T}\\ \mathrm{B\ T_7\ I}\end{smallmatrix}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000300	.000200	0.	....	
3,750	15,000	.000367	.000067	0.	....	
5,000	20,000	.000600	.000233	0.	....	
6,250	25,000	.000700	.000100	−.000033	−.000033	
7,500	30,000	.000967	.000267	−.000033	0.	
8,750	35,000	.001167	.000200	....	....	Elastic limit.
9,000	36,000	.005600	.004433	....	....	
9,250	37,000	.006333	.000733	....	....	
9,500	38,000	.007267	.000934	....	....	
9,750	39,000	.008267	.001000	....	....	
10,000	40,000	.009333	.001066	....	....	
10,250	41,000	.010133	.000800	....	....	
10,500	42,000	.011467	.001334	....	....	
10,750	43,000	.012333	.000866	....	....	
11,000	44,000	.013667	.001334	....	....	
11,250	45,000	.015333	.001666	....	....	
11,500	46,000	.016667	.001334	....	....	
11,750	47,000	.017667	.001000	....	....	
12,000	48,000	.019333	.001666	....	....	
12,250	49,000	.020167	.000834	....	....	
12,500	50,000	.021833	.001666	....	....	
13,000	52,000	.025000	.003167	....	....	
13,500	54,000	.028333	.003333	....	....	
14,000	56,000	.032667	.004334	....	....	
14,500	58,000	.037000	.004333	....	....	
15,000	60,000	.0467	.0097	....	....	
15,500	62,000	.0533	.0066	....	....	
16,000	64,000	.0600	.0067	....	....	
16,500	66,000	.0700	.0100	....	....	
17,000	68,000	.0867	.0167	....	....	
17,500	70,000	.1100	.0233	....	....	
18,000	72,000	.1533	.0433	....	....	
18,110	72,440	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	72,440
Elastic limit per square inch of original section	do...	35,000
Elongation per inch after rupture	inch..	0.2933
Elongation per inch under strain at elastic limit	do...	.001167
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		″.30 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.18, ″.43*, ″.27

No. 2669.

Marks, $^{8\,\mathrm{Cn\,R_8,\,T}}_{\mathrm{B\,T_8\,O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100			
2, 500	10, 000	.000333	.000233			
3, 750	15, 000	.000467	.000134			
5, 000	20, 000	.000633	.000166			
6, 250	25, 000	.000800	.000167			
7, 500	30, 000	.000967	.000167	—.000033	—.000033	
8, 750	35, 000	.001167	.000200			
9, 000	36, 000	.001233	.000066			Elastic limit.
9, 250	37, 000	.003000	.001767			
9, 500	38, 000	.004267	.001267			
9, 750	39, 000	.005233	.000966			
10, 000	40, 000	.006167	.000934			
10, 250	41, 000	.007033	.000866			
10, 500	42, 000	.008000	.000967			
10, 750	43, 000	.008767	.000767			
11, 000	44, 000	.009933	.001166			
11, 250	45, 000	.010733	.000800			
11, 500	46, 000	.012033	.001300			
11, 750	47, 000	.013000	.000967			
12, 000	48, 000	.014267	.001267			
12, 250	49, 000	.015267	.001000			
12, 500	50, 000	.016600	.001333			
13, 000	52, 000	.019600	.003000			
13, 500	54, 000	.022033	.002433			
14, 000	56, 000	.025067	.003034			
14, 500	58, 000	.028567	.003500			
15, 000	60, 000	.033000	.004433			
15, 500	62, 000	.036667	.003667			
16, 000	64, 000	.041333	.004666			
16, 500	66, 000	.0467	.005367			
17, 000	68, 000	.0567	.0100			
17, 500	70, 000	.0633	.0066			
18, 000	72, 000	.0700	.0067			
18, 500	74, 000	.0900	.0200			
19, 000	76, 000	.1133	.0233			
19, 240	76, 960	.1567	.0434			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76, 960
Elastic limit per square inch of original section	do...	36, 000
Elongation per inch after rupture	inch..	0.2567
Elongation per inch under strain at elastic limit	do...	.001233
Reduction in diameter at point of rupture	do...	.184
Reduction in area after rupture, per centum of original section		54.6
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		″.16, ″.46*, ″.15

No. 2670.

Marks, $^{8\,\mathrm{Cn\,R_E\,T}}_{\mathrm{B\,T.\,M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	**Initial load.**
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000967	.000200	—.000033	—.000033	
8,500	34,000	.001133	.000166	....	....	
8,750	35,000	.001200	.000067	....	....	**Elastic limit.**
9,000	36,000	.003000	.001800	....	....	
9,250	37,000	.004733	.001733	....	....	
9,500	38,000	.005700	.000967	....	....	
9,750	39,000	.006567	.000867	....	....	
10,000	40,000	.007433	.000866	....	....	
10,250	41,000	.008367	.000934	....	....	
10,500	42,000	.009333	.000966	....	....	
10,750	43,000	.010400	.001067	....	....	
11,000	44,000	.011500	.001100	....	....	
11,250	45,000	.012433	.000933	....	....	
11,500	46,000	.013733	.001300	....	....	
11,750	47,000	.014733	.001000	....	....	
12,000	48,000	.016233	.001500	....	....	
12,500	50,000	.018933	.002700	....	....	
13,000	52,000	.022033	.003100	....	....	
13,500	54,000	.025167	.003134	....	....	
14,000	56,000	.028833	.003666	....	....	
14,500	58,000	.032733	.003900	....	....	
15,000	60,000	.037667	.004934	....	....	
15,500	62,000	.042267	.004600	....	....	
16,000	64,000	.0467	.004433	....	....	
16,500	66,000	.0567	.0100	....	....	
17,000	68,000	.0667	.0100	....	....	
17,500	70,000	.0767	.0100	....	....	
18,000	72,000	.0933	.0166	....	....	
18,500	74,000	.1233	.0300	....	....	
18,700	74,800	.1667	.0434	....	....	**Tensile strength.**

General summary.

Tensile strength per square inch of original section	pounds..	74,800
Elastic limit per square inch of original section	do...	35,000
Elongation per inch after rupture	inch..	0.2533
Elongation per inch under strain at elastic limit	do...	.001200
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		1″.32 from neck
Character of broken surface		silky
Elongation of inch sections		″.15, ″.29*, ″.32*

No. 2671.

Marks, $\overset{8\,\mathrm{Cn}\,\mathrm{R}_{28}\,\mathrm{T}}{\mathrm{M}\,\mathrm{T}_{19}\,\mathrm{I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000600	.000133	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	0.	....	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001167	.000034	....	....	
9,500	38,000	.001200	.000033	....	....	
9,750	39,000	.001267	.000067	....	....	
10,000	40,000	.001333	.000066	....	....	
10,250	41,000	.001367	.000034	....	....	Elastic limit.
10,500	42,000	.002233	.000866	....	....	
10,750	43,000	.003433	.001200	....	....	
11,000	44,000	.004867	.001434	....	....	
11,250	45,000	.006133	.001266	....	....	
11,500	46,000	.007233	.001100	....	....	
11,750	47,000	.008000	.000767	....	....	
12,000	48,000	.009333	.001333	....	....	
12,250	49,000	.010100	.000767	....	....	
12,500	50,000	.011200	.001100	....	....	
13,000	52,000	.013567	.002367	....	....	
13,500	54,000	.015833	.002266	....	....	
14,000	56,000	.018267	.002434	....	....	
14,500	58,000	.021267	.003000	....	....	
15,000	60,000	.024167	.002900	....	....	
15,500	62,000	.027333	.003166	....	....	
16,000	64,000	.030833	.003500	....	....	
16,500	66,000	.034833	.004000	....	....	
17,000	68,000	.039333	.004500	....	....	
17,500	70,000	.0433	.003967	....	....	
18,000	72,000	.0533	.0100	....	....	
18,500	74,000	.0633	.0100	....	....	
19,000	76,000	.0700	.0067	....	....	
19,500	78,000	.0900	.0200	....	....	
19,980	79,920	.1400	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	79,920
Elastic limit per square inch of original section	do...	41,000
Elongation per inch after rupture	inch..	0.2033
Elongation per inch under strain at elastic limit	do...	.001367
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		⅞ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.12, ″.13, ″.36*

No. 2672.

Marks, $^{8\,\mathrm{Cn}\,\mathrm{R}_{32}\,\mathrm{T}}_{\mathrm{M}\,\mathrm{T}_{11}\,\mathrm{O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000233	.000100	0.	....	
3,750	15,000	.000367	.000134	0.	....	
5,000	20,000	.000567	.000200	0.	....	
6,250	25,000	.000700	.000133	0.	....	
7,500	30,000	.000900	.000200	0.	....	
8,750	35,000	.001100	.000200	0.	....	
10,000	40,000	.001300	.000200	....	....	
10,250	41,000	.001333	.000033	....	....	
10,500	42,000	.001433	.000100	....	....	Elastic limit.
10,750	43,000	.002900	.001467	....	....	
11,000	44,000	.004500	.001600	....	....	
11,250	45,000	.005433	.000933	....	....	
11,500	46,000	.006500	.001067	....	....	
11,750	47,000	.007500	.001000	....	....	
12,000	48,000	.008667	.001167	....	....	
12,250	49,000	.009733	.001066	....	....	
12,500	50,000	.010733	.001000	....	....	
13,000	52,000	.012667	.001934	....	....	
13,500	54,000	.014967	.002300	....	....	
14,000	56,000	.017233	.002266	....	....	
14,500	58,000	.019800	.002567	....	....	
15,000	60,000	.022500	.002700	....	....	
15,500	62,000	.025500	.003000	....	....	
16,000	64,000	.028933	.003433	....	....	
16,500	66,000	.032333	.003400	....	....	
17,000	68,000	.036667	.004334	....	....	
17,500	70,000	.042167	.005500	....	....	
18,000	72,000	.0467	.001533	....	....	
18,500	74,000	.0567	.0100	....	....	
19,000	76,000	.0667	.0100	....	....	
19,500	78,000	0733	.0066	....	....	
20 000	80,000	.0900	.0167	....	....	
20,500	82,000	.1333	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section........pounds..	82,000
Elastic limit per square inch of original section........do...	42,000
Elongation per inch after rupture........inch..	0.2200
Elongation per inch under strain at elastic limit........do...	.001433
Reduction in diameter at point of rupture........do...	.154
Reduction in area after rupture, per centum of original section........ ...	47.2
Position of rupture........	1″.10 from neck
Character of broken surface........	silky
Elongation of inch sections........	″.11, ″.23, ″.32*

No. 2673.

Marks, $^{8\ \mathrm{Cu\ R_{2}\ T}}_{\mathrm{M\ T_{1},\ M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000867	.000200	0.	....	
7,500	30,000	.001033	.000166	0.	....	
8,750	35,000	.001233	.000200	.000067	.000067	
9,000	36,000	.001300	.000067	....	....	
9,250	37,000	.001333	.000033	....	....	
9,500	38,000	.001367	.000034	....	....	Elastic limit.
9,750	39,000	.001500	.000133	....	....	
10,000	40,000	.003500	.002000	....	....	
10,250	41,000	.005333	.001833	....	....	
10,500	42,000	.007000	.001667	....	....	
10,750	43,000	.008000	.001000	....	....	
11,000	44,000	.009000	.001000	....	....	
11,250	45,000	.009833	.000833	....	....	
11,500	46,000	.010700	.000867	....	....	
11,750	47,000	.011400	.000700	....	....	
12,000	48,000	.012833	.001433	....	....	
12,250	49,000	.014033	.001200	....	....	
12,500	50,000	.015500	.001467	....	....	
13,000	52,000	.018333	.002833	....	....	
13,500	54,000	.020700	.002367	....	....	
14,000	56,000	.023833	.003133	....	....	
14,500	58,000	.027333	.003500	....	....	
15,000	60,000	.030667	.003334	....	....	
15,500	62,000	.035000	.004333	....	....	
16,000	64,000	.039667	.004667	....	....	
16,500	66,000	.0467	.007033	....	....	
17,000	68,000	.0533	.0066	....	....	
17,500	70,000	.0633	.0100	....	....	
18,000	72,000	.0700	.0067	....	....	
18,500	74,000	.0933	.0233	....	....	
19,000	76,000	.1200	.0267	....	....	
19,150	76,600	.1667	.0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76,600
Elastic limit per square inch of original section	do...	38,000
Elongation per inch after rupture	inch..	0.2233
Elongation per inch under strain at elastic limit	do...	.001367
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		1″.60 from neck
Character of broken surface		silky
Elongation of inch sections		″.18, ″.40*, ″.14

No. 1001.

Marks, $^{8}_{B}\,^{T_8}_{T_1}I$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	.000033	.000033	
8, 750	35, 000	.001167	.000234	.000067	.000034	
9, 000	36, 000	.001200	.000033	....	....	
9, 250	37, 000	.001233	.000033	....	....	Elastic limit.
9, 500	38, 000	.001333	.000100	....	....	
9, 750	39, 000	.002333	.001000	....	....	
10, 000	40, 000	.004833	.002500	.003567	.003500	
10, 250	41, 000	.005500	.000667	....	....	
10, 500	42, 000	.006700	.001200	....	....	
10, 750	43, 000	.007900	.001200	....	....	
11, 000	44, 000	.008933	.001033	....	....	
11, 250	45, 000	.009967	.001034	.008300	.004733	
11, 500	46, 000	.011400	.001433	....	....	
11, 750	47, 000	.012167	.000767	....	....	
12, 000	48, 000	.013500	.001333	....	....	
12, 250	49, 000	.014767	.001267	....	....	
12, 500	50, 000	.016533	.001766	.014600	.006300	
13, 000	52, 000	.019333	.002800	....	....	
13, 500	54, 000	.022267	.002934	....	....	
14, 000	56, 000	.026100	.003833	....	....	
14, 500	58, 000	.030400	.004300	....	....	
15, 000	60, 000	.034600	.004200	....	....	
15, 500	62, 000	.040000	.005400	....	....	
16, 000	64, 000	.046933	.006933	....	....	
16, 500	66, 000	.054700	.007767	....	....	
17, 000	68, 000	.065833	.011133	....	....	
17, 500	70, 000	.082500	.016667	....	....	
18, 000	72, 000	.1100	.0275	....	....	
18, 260	73, 040	.1733	.0633	....	....	Tensile strength.
15, 700	....	....	....	....	....	Load at time of rupture.

General summary.

Specific gravity	7. 8552
Hardness	11. 49
Tensile strength per square inch of original section ......pounds..	73, 040
Elastic limit per square inch of original section ......do...	37, 000
Elongation per inch after rupture ......inch..	0. 2767
Elongation per inch under strain at elastic limit ......do...	.001233
Reduction in diameter at point of rupture ......do...	.164
Reduction in area after rupture, per centum of original section	49. 7
Position of rupture	⅛ inch from middle of stem
Character of broken surface	silky

No. 1002.

Marks, $\overset{8T_{28}}{B\,T_2\,O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000067	.000067	0.		
2,500	10,000	.000233	.000166	0.		
3,750	15,000	.000400	.000167	0.		
5,000	20,000	.000567	.000167	0.		
6,250	25,000	.000733	.000166	0.		
7,500	30,000	.000900	.000167	0.		
8,750	35,000	.001067	.000167	0.		
9,000	36,000	.001100	.000033			
9,250	37,000	.001133	.000033			
9,500	38,000	.001167	.000034			
9,750	39,000	.001200	.000033			
10,000	40,000	.001233	.000033	0.		
10,250	41,000	.001267	.000034			Elastic limit.
10,500	42,000	.004000	.002733			
10,750	43,000	.004833	.000833			
11,000	44,000	.006033	.001200			
11,250	45,000	.006667	.000634	.005033	.005033	
11,500	46,000	.008000	.001333			
11,750	47,000	.009100	.001100			
12,000	48,000	.010233	.001133			
12,250	49,000	.011367	.001134			
12,500	50,000	.012600	.001233	.010733	.005700	
13,000	52,000	.015133	.002533			
13,500	54,000	.018333	.003200			
14,000	56,000	.021267	.002934			
14,500	58,000	.024067	.002800			
15,000	60,000	.028000	.003933			
15,500	62,000	.032000	.004000			
16,000	64,000	.036367	.004367			
16,500	66,000	.042667	.006300			
17,000	68,000	.049167	.006500			
17,500	70,000	.058000	.008833			
18,000	72,000	.071000	.013000			
18,500	74,000	.0933	.0223			
18,950	75,800	.1600	.0667			Tensile strength.
15,800						Load at time of rupture.

General summary.

Tensile strength per square inch of original section……pounds..	75,800
Elastic limit per square inch of original section……do…	41,000
Elongation per inch after rupture……inch..	0.2533
Elongation per inch under strain at elastic limit……do…	.001267
Reduction in diameter at point of rupture……do…	.174
Reduction in area after rupture, per centum of original section……	52.2
Position of rupture……	⅜ inch from middle of stem
Character of broken surface……	silky
Elongation of inch sections……	″.19, ″.44*, ″.13

No. 1003.

Marks, $\frac{8\,T_{14}}{B\,T_3\,M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.		
2, 500	10, 000	.000333	.000166	0.		
3, 750	15, 000	.000500	.000167	0.		
5, 000	20, 000	.000667	.000167	.000033	.000033	
6, 250	25, 000	.000833	.000166	.000033	0.	
7, 500	30, 000	.001000	.000167	.000067	.000034	
8, 750	35, 000	.001133	.000133			
9, 000	36, 000	.001167	.000034			
9, 250	37, 000	.001233	.000066			
9, 500	38, 000	.001300	.000067			Elastic limit.
9, 750	39, 000	.001533	.000233			
10, 000	40, 000	.004233	.002700	.002900	.002833	
10, 250	41, 000	.005400	.001167			
10, 500	42, 000	.006233	.000833			
10, 750	43, 000	.007767	.001534			
11, 000	44, 000	.008267	.000500			
11, 250	45, 000	.009200	.000933	.007600	.004700	
11, 500	46, 000	.010567	.001367			
11, 750	47, 000	.011767	.001200			
12, 000	48, 000	.012767	.001000			
12, 250	49, 000	.014133	.001366			
12, 500	50, 000	.015633	.001500	.013767	.006167	
13, 000	52, 000	.017400	.001767			
13, 500	54, 000	.020833	.003433			
14, 000	56, 000	.023767	.002934			
14, 500	58, 000	.026833	.003066			
15, 000	60, 000	.030833	.004000			
15, 500	62, 000	.035500	.004667			
16, 000	64, 000	.040833	.005333			
16, 500	66, 000	.047067	.006234			
17, 000	68, 000	.054500	.007433			
17, 500	70, 000	.065500	.011000			
18, 000	72, 000	.081333	.015833			
18, 500	74, 000	.1067	.025367			
18, 800	75, 200					Tensile strength.
15, 900						Load at time of rupture.

General summary.

Tensile strength per square inch of original section	pounds	75, 200
Elastic limit per square inch of original section	do	38, 000
Elongation per inch after rupture	inch	0. 2600
Elongation per inch under strain at elastic limit	do	.001300
Reduction in diameter at point of rupture	do	.174
Reduction in area after rupture, per centum of original section		52. 2
Position of rupture		⅜ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.20, ″.42*, ″.16

No. 1004.

Marks, $\overset{8}{M}\,\overset{T_{s}}{T_{1}}\,I$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000333	.000200	.000033	.000033	
3, 750	15, 000	.000467	.000134	.000067	.000034	
5, 000	20, 000	.000633	.000166	.000067	0.	
6, 250	25, 000	.000800	.000167	.000067	0.	
7, 500	30, 000	.000967	.000167	.000067	0.	
8, 750	35, 000	.001133	.000166	.000100	.000033	
10, 000	40, 000	.001267	.000134	.000100	0.	
10, 250	41, 000	.001300	.000033	....	....	
10, 500	42, 000	.001367	.000067	....	....	
10, 750	43, 000	.001400	.000033	....	....	
11, 000	44, 000	.001433	.000033	....	....	
11, 250	45, 000	.001467	.000034	.000100	0.	
11, 500	46, 000	.001533	.000066	....	....	Elastic limit.
11, 750	47, 000	.001733	.000200	....	....	
12, 000	48, 000	.002667	.000934	....	....	
12, 250	49, 000	.006000	.003333	....	....	
12, 500	50, 000	.008267	.002267	.000400	.000300	
12, 750	51, 000	.008900	.000633	....	....	
13, 000	52, 000	.009767	.000867	....	....	
13, 250	53, 000	.010800	.001033	....	....	
13, 500	54, 000	.012333	.001533	....	....	
13, 750	55, 000	.014000	.001667	....	....	
14, 000	56, 000	.015333	.001333	....	....	
14, 250	57, 000	.017000	.001667	....	....	
14, 500	58, 000	.018333	.001333	....	....	
14, 750	59, 000	.019833	.001500	....	....	
15, 000	60, 000	.021667	.001834	....	....	
15, 500	62, 000	.024933	.003266	....	....	
16, 000	64, 000	.028467	.003534	....	....	
16, 500	66, 000	.033000	.004533	....	....	
17, 000	68, 000	.038333	.005333	....	....	
17, 500	70, 000	.044000	.005667	....	....	
18, 000	72, 000	.051500	.007500	....	....	
18, 500	74, 000	.061667	.010167	....	....	
19, 000	76, 000	.0800	.018333	....	....	
19, 500	78, 000	.1467	.0667	....	....	Tensile strength.
17, 500	....	....	....	....	....	Load at time of rupture.

General summary.

Specific gravity		7. 8517
Hardness		13. 65
Tensile strength per square inch of original section	pounds..	78, 000
Elastic limit per square inch of original section	do...	46, 000
Elongation per inch after rupture	inch..	0. 2133
Elongation per inch under strain at elastic limit	do...	.001533
Reduction in diameter at point of rupture	do...	.134
Reduction in area after rupture, per centum of original section		41. 9
Position of rupture		⅛ inch from middle of stem
Character of broken surface		silky, 50 per centum; granular, 50 per centum
Elongation of inch sections		″.16, ″.35*, ″.13

No. 1005.

Marks, $\overset{8\ T_{35}}{M\ T_{2}\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000067	.000067	0.		
2,500	10,000	.000200	.000133	0.		
3,750	15,000	.000367	.000167	0.		
5,000	20,000	.000533	.000166	0.		
6,250	25,000	.000700	.000167	0.		
7,500	30,000	.000867	.000167	0.		
8,750	35,000	.001033	.000166	0.		
10,000	40,000	.001200	.000167	0.		
10,250	41,000	.001233	.000033			
10,500	42,000	.001300	.000067			
10,750	43,000	.001367	.000067			
11,000	44,000	.001433	.000066			Elastic limit.
11,250	45,000	.003333	.001900	.001700	.001700	
11,500	46,000	.004500	.001167			
11,750	47,000	.005800	.001300			
12,000	48,000	.006667	.000867			
12,250	49,000	.007733	.001066			
12,500	50,000	.009133	.001400	.007300	.005600	
12,750	51,000	.009767	.000634			
13,000	52,000	.010800	.001033			
13,250	53,000	.012067	.001267			
13,500	54,000	.013433	.001366			
13,750	55,000	.014333	.000900			
14,000	56,000	.015933	.001600			
14,250	57,000	.017267	.001334			
14,500	58,000	.018667	.001400			
14,750	59,000	.020067	.001400			
15,000	60,000	.021833	.001766			
15,500	62,000	.025033	.003200			
16,000	64,000	.029000	.003967			
16,500	66,000	.033167	.004167			
17,000	68,000	.037600	.004433			
17,500	70,000	.043333	.005733			
18,000	72,000	.051000	.007667			
18,500	74,000	.060667	.009667			
19,000	76,000	.074667	.014000			
19,500	78,000	.1000	.025333			
19,800	79,200	.1367	.0367			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	79,200
Elastic limit per square inch of original section	do...	44,000
Elongation per inch after rupture	inch..	0.2633
Elongation per inch under strain at elastic limit	do...	.001433
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		″.17, ″.44*, ″.18

No. 1006.

Marks, $\overset{8\ T_{35}}{M\ T_{3}\ M}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	.000033	.000033	
7, 500	30, 000	.000933	.000166	.000033	0.	
8, 750	35, 000	.001100	.000167	.000033	0.	
10, 000	40, 000	.001267	.000167	.000067	.000034	Elastic limit.
10, 250	41, 000	.001400	.000133	....	....	
10, 500	42, 000	.002633	.001233	....	....	
10, 750	43, 000	.004667	.002034	....	....	
11, 000	44, 000	.005933	.001266	....	....	
11, 250	45, 000	.006767	.000834	.005267	.005200	
11, 500	46, 000	.008433	.001666	....	....	
11, 750	47, 000	.009000	.000567	....	....	
12, 000	48, 000	.010233	.001233	....	....	
12, 250	49, 000	.011067	.000834	....	....	
12, 500	50, 000	.012700	.001633	.010933	.005666	
12, 750	51, 000	.013400	.000700	....	....	
13, 000	52, 000	.014233	.000833	....	....	
13, 250	53, 000	.015667	.001434	....	....	
13, 500	54, 000	.017500	.001833	....	....	
13, 750	55, 000	.018933	.001433	....	....	
14, 000	56, 000	.020033	.001100	....	....	
14, 250	57, 000	.021567	.001534	....	....	
14, 500	58, 000	.023267	.001700	....	....	
14, 750	59, 000	.024667	.001400	....	....	
15, 000	60, 000	.026667	.002000	....	....	
15, 500	62, 000	.030333	.003666	....	....	
16, 000	64, 000	.034500	.004167	....	....	
16, 500	66, 000	.039933	.005433	....	....	
17, 000	68, 000	.046500	.006567	....	....	
17, 500	70, 000	.053833	.007333	....	....	
18, 000	72, 000	.063333	.009500	....	....	
18, 500	74, 000	.0767	.013367	....	....	
19, 000	76, 000	.1033	.0266	....	....	
19, 370	77, 480	.1767	.0734	....	....	Tensile strength.
16, 900	....	....	....	....	....	Load at time of rupture.

General summary.

Tensile strength per square inch of original section	pounds..	77, 480
Elastic limit per square inch of original section	do ..	40, 000
Elongation per inch after rupture	inch..	0. 2633
Elongation per inch under strain at elastic limit	do...	.001267
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		⅜ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.40* ″.21 ″.18

No. 1007.

Marks, $^{8}T_{28}$ $_{B}T_{1}I$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000800	.000200	0.	....	
7,500	30,000	.000967	.000167	.000033	.000033	
8,750	35,000	.001100	.000133	.000033	0.	
9,250	37,000	.001233	.000133	....	....	
9,500	38,000	.001267	.000034	....	....	Elastic limit.
9,750	39,000	.003567	.002300	....	....	
10,000	40,000	.004800	.001233	.003433	.003400	
10,250	41,000	.005467	.000667	....	....	
10,500	42,000	.006967	.001500	....	....	
10,750	43,000	.007667	.000700	....	....	
11,000	44,000	.009567	.001900	....	....	
11,250	45,000	.010767	.001200	.009133	.005700	
11,500	46,000	.011633	.000866	....	....	
11,750	47,000	.012700	.001067	....	....	
12,000	48,000	.014500	.001800	....	....	
12,250	49,000	.015933	.001433	....	....	
12,500	50,000	.017467	.001534	.015567	.006434	
12,750	51,000	.018400	.000933	....	....	
13,000	52,000	.020000	.001600	....	....	
13,250	53,000	.021533	.001533	....	....	
13,500	54,000	.023600	.002067	....	....	
13,750	55,000	.025500	.001900	....	....	
14,000	56,000	.027500	.002000	....	....	
14,250	57,000	.029567	.002067	....	....	
14,500	58,000	.032000	.002433	....	....	
14,750	59,000	.034333	.002333	....	....	
15,000	60,000	.037200	.002867	....	....	
15,500	62,000	.043333	.006133	....	....	
16,000	64,000	.050000	.006667	....	....	
16,500	66,000	.058833	.008833	....	....	
17,000	68,000	.071000	.012167	....	....	
17,500	70,000	.0900	.0190	....	....	
18,000	72,000	.1333	.0433	....	....	
18,050	72,200	.1667	.0334	....	....	Tensile strength.
14,700	....	....	....	....	....	Load at time of rupture.

General summary.

Specific gravity		7.8577
Hardness		11.92
Tensile strength per square inch of original section	pounds..	72,200
Elastic limit per square inch of original section	do...	38,000
Elongation per inch after rupture	inch..	0.2700
Elongation per inch under strain at elastic limit	do...	.001267
Reduction in diameter at point of rupture	do. .	.184
Reduction in area after rupture, per centum of original section		54.6
Position of rupture		⅝ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		".37*, ".32, ".12

No. 1008.

Marks, $^{8\ T_{36}}_{B\ T_2\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000067	.000067	0.	....	
2, 500	10, 000	.000233	.000166	0.	....	
3, 750	15, 000	.000400	.000167	0.	....	
5, 000	20, 000	.000567	.000167	0.	....	
6, 250	25, 000	.000733	.000166	0.	....	
7, 500	30, 000	.000900	.000167	0.	....	
8, 750	35, 000	.001067	.000167	0.	....	
9, 000	36, 000	.001067	0.	....	....	
9, 250	37, 000	.001100	.000033	....	....	
9, 500	38, 000	.001133	.000033	....	....	
9, 750	39, 000	.001167	.000034	....	....	
10, 000	40, 000	.001233	.000066	0.	....	
10, 250	41, 000	.001267	.000034	....	....	
10, 500	42, 000	.001300	.000033	....	....	Elastic limit.
10, 750	43, 000	.001400	.000100	....	....	
11, 000	44, 000	.005467	.004067	....	....	
11, 250	45, 000	.006433	.000966	.004867	.004867	
11, 500	46, 000	.007400	.000967	....	....	
11, 750	47, 000	.008200	.000800	....	....	
12, 000	48, 000	.009433	.001233	....	....	
12, 250	49, 000	.010500	.001067	....	....	
12, 500	50, 000	.011800	.001300	.010033	.005166	
12, 750	51, 000	.012600	.000800	....	....	
13, 000	52, 000	.013333	.000733	....	....	
13, 250	53, 000	.014733	.001400	....	....	
13, 500	54, 000	.016333	.001600	....	....	
13, 750	55, 000	.018000	.001667	....	....	
14, 000	56, 000	.019333	.001333	....	....	
14, 250	57, 000	.021333	.002000	....	....	
14, 500	58, 000	.022333	.001000	....	....	
14, 750	59, 000	.023333	.001000	....	....	
15, 000	60, 000	.025333	.002000	....	....	
15, 500	62, 000	.029000	.003667	....	....	
16, 000	64, 000	.032667	.003667	....	....	
16, 500	66, 000	.037500	.004833	....	....	
17, 000	68, 000	.042667	.005167	....	....	
17, 500	70, 000	.049000	.006333	....	....	
18, 000	72, 000	.057000	.008000	....	....	
18, 500	74, 000	.069000	.012000	....	....	
19, 000	76, 000	.0867	.0177	....	....	
19, 500	78, 000	.1300	.0433	....	....	
19, 570	78, 280	1600	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	78, 28
Elastic limit per square inch of original section	do...	42, 000
Elongation per inch after rupture	inch..	0. 2700
Elongation per inch under strain at elastic limit	do...	.001300
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44. 6
Position of rupture		¾ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.32, ″.30, ″.19

No. 1009.

Marks, $\overset{8\,T_{36}}{B\,T_{3}\,M}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000067	.000067	0.	....	
2, 500	10, 000	.000233	.000166	0.	....	
3, 750	15, 000	.000400	.000167	0.	....	
5, 000	20, 000	.000567	.000167	0.	....	
6, 250	25, 000	.000733	.000166	0.	....	
7, 500	30, 000	.000900	.000167	0.	....	
8, 750	35, 000	.001070	.000167	0.	....	
9, 000	36, 000	.001100	.000033	....	....	
9, 250	37, 000	.001133	.000033	....	....	
9, 500	38, 000	.001167	.000034	....	....	
9, 750	39, 000	.001200	.000033	....	....	Elastic limit.
10, 000	40, 000	.001333	.000133	.000100	.000100	
10, 250	41, 000	.002667	.001334	....	....	
10, 500	42, 000	.004267	.001600	....	....	
10, 750	43, 000	.005500	.001233	....	....	
11, 000	44, 000	.006600	.001100	....	....	
11, 250	45, 000	.007600	.001000	.005933	.005833	
11, 500	46, 000	.008833	.001233	....	....	
11, 750	47, 000	.009833	.001000	....	....	
12, 000	48, 000	.011100	.001267	....	....	
12, 250	49, 000	.012467	.001367	....	....	
12, 500	50, 000	.013600	.001133	.011733	.005800	
12, 750	51, 000	.014500	.000900	....	....	
13, 000	52, 000	.015833	.001333	....	....	
13, 250	53, 000	.017033	.001200	....	....	
13, 500	54, 000	.018867	.001834	....	....	
13, 750	55, 000	.020400	.001533	....	....	
14, 000	56, 000	.022333	.001933	....	....	
14, 250	57, 000	.023733	.001400	....	....	
14, 500	58, 000	.025400	.001667	....	....	
14, 750	59, 000	.027067	.001667	....	....	
15, 000	60, 000	.029267	.002200	....	....	
15, 500	62, 000	.034133	.004866	....	....	
16, 000	64, 000	.038667	.004534	....	....	
16, 500	66, 000	.044667	.006000	....	....	
17, 000	68, 000	.051833	.007166	....	....	
17, 500	70, 000	.061667	.009834	....	....	
18, 000	72, 000	.074000	.012333	....	....	
18, 500	74, 000	.1033	.0293	....	....	
18, 860	75, 440	.1533	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	75, 440
Elastic limit per square inch of original section	do...	39, 000
Elongation per inch after rupture	inch..	0. 2467
Elongation per inch under strain at elastic limit	do...	.001200
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		41. 6
Position of rupture		".60 from middle of stem
Character of broken surface		silky
Elongation of inch sections		".31*, ".30, ".13

No. 1010.

Marks, $\overset{8}{\text{M}}\,\overset{\text{T}}{\text{T}}\,\text{I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000267	.000134	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000633	.000200	.000033	.000033	
6, 250	25, 000	.000767	.000134	....	....	
7, 500	30, 000	.000933	.000166	....	....	
8, 750	35, 000	.001100	.000167	....	....	
9, 500	38, 000	.001133	.000033	....	....	
9, 750	39, 000	.001200	.000067	....	....	
10, 000	40, 000	.001367	.000167	.000133	.000100	
10, 250	41, 000	.001400	.000033	....	....	
10, 500	42, 000	.001467	.000067	....	....	Elastic limit.
10, 750	43, 000	.001633	.000166	....	....	
11, 000	44, 000	.002167	.000534	....	....	
11, 250	45, 000	.005467	.003300	.003933	.003800	
11, 500	46, 000	.006067	.000600	....	....	
11, 750	47, 000	.007200	.000133	....	....	
12, 000	48, 000	.008700	.001500	....	....	
12, 250	49, 000	.009433	.000733	....	....	
12, 500	50, 000	.010933	.001500	.009167	.005234	
12, 750	51, 000	.011733	.000800	....	....	
13, 000	52, 000	.012433	.000700	....	....	
13, 250	53, 000	.013533	.001100	....	....	
13, 500	54, 000	.015133	.001600	....	....	
13, 750	55, 000	.016167	.001034	....	....	
14, 000	56, 000	.018000	.001833	....	....	
14, 250	57, 000	.019333	.001333	....	....	
14, 500	58, 000	.020733	.001400	....	....	
14, 750	59, 000	.021933	.001200	....	....	
15, 000	60, 000	.023600	.001667	....	....	
15, 500	62, 000	.027000	.003400	....	....	
16, 000	64, 000	.031000	.004000	....	....	
16, 500	66, 000	.035333	.004333	....	....	
17, 000	68, 000	.040200	.004867	....	....	
17, 500	70, 000	.047267	.007067	....	....	
18, 000	72, 000	.056167	.010900	....	....	
18, 500	74, 000	.065667	.009500	....	....	
19, 000	76, 000	.0800	.014333	....	....	
19, 500	78, 000	.1067	.0267	....	....	
19, 610	78, 440	.1533	.0466	....	....	Tensile strength.

General summary.

Specific gravity		7, 8553
Hardness		13. 36
Tensile strength per square inch of original section	pounds..	78, 440
Elastic limit per square inch of original section	do...	42, 000
Elongation per inch after rupture	inch..	0. 2167
Elongation per inch under strain at elastic limit	do...	.001467
Reduction in diameter at point of rupture	do...	.104
Reduction in area after rupture, per centum of original section		33. 5
Position of rupture		1 inch from neck
Character of broken surface.		granular, 60 per centum; silky, 40 per centum
Elongation of inch sections		″.33*, ″.19, ″.13

No. 1011.

Marks, $\substack{8\,T_8 \\ M\,T_2\,O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000067	.000067	0.	....	
2,500	10,000	.000233	.000166	0.	....	
3,750	15,000	.000400	.000167	0.	....	
5,000	20,000	.000567	.000167	0.	....	
6,250	25,000	.000733	.000166	0.	....	
7,500	30,000	.000900	.000167	0.	....	
8,750	35,000	.001067	.000167	0.	....	
9,000	36,000	.001100	.000033	....	....	
9,250	37,000	.001133	.000033	....	....	
9,500	38,000	.001200	.000067	....	....	
9,750	39,000	.001233	.000033	....	....	
10,000	40,000	.001300	.000007	.000067	.000067	
10,250	41,000	.001367	.000067	....	....	
10,500	42,000	.001433	.000066	....	....	
10,750	43,000	.001500	.000067	....	....	Elastic limit.
11,000	44,000	.003733	.002233	....	....	
11,250	45,000	.005400	.001667	.003800	.003733	
11,500	46,000	.006000	.000600	....	....	
11,750	47,000	.007267	.001267	....	....	
12,000	48,000	.008433	.001166	....	....	
12,250	49,000	.009333	.000900	....	....	
12,500	50,000	.010667	.001334	.008767	.004967	
12,750	51,000	.011333	.000666	....	....	
13,000	52,000	.012467	.001134	....	....	
13,250	53,000	.013667	.001200	....	....	
13,500	54,000	.015100	.001433	....	....	
13,750	55,000	.016233	.001133	....	....	
14,000	56,000	.017567	.001334	....	....	
14,250	57,000	.019000	.001433	....	....	
14,500	58,000	.020400	.001400	....	....	
14,750	59,000	.021733	.001333	....	....	
15,000	60,000	.023600	.001867	....	....	
15,500	62,000	.026200	.002600	....	....	
16,000	64,000	.030167	.003967	....	....	
16,500	66,000	.034167	.004000	....	....	
17,000	68,000	.038667	.004500	....	....	
17,500	70,000	.044133	.005466	....	....	
18,000	72,000	.050833	.006700	....	....	
18,500	74,000	.060167	.009334	....	....	
19,000	76,000	.072667	.012500	....	....	
19,500	78,000	.0933	.020633	....	....	
19,890	79,560	.1567	.0634	....	....	Tensile strength.
17,100	....	....	....	....	....	Load at time of rupture.

General summary.

Tensile strength per square inch of original section....................................pounds.. 79,560
Elastic limit per square inch of original section....................................do... 43,000
Elongation per inch after rupture....................................inch.. 0.2700
Elongation per inch under strain at elastic limit....................................do... .001500
Reduction in diameter at point of rupture....................................do... .154
Reduction in area after rupture, per centum of original section 47.2
Position of rupture.. ″.10 from middle of stem
Character of broken surface...................................silky; interspersed with fine granulation
Elongation of inch sections ....″.18, ″.44, ″.19

No. 1012.

Marks, $\overset{8\,T_{8}}{M\,T_{1}\,M}$
Diameter, ″.564.
Sectional area, .25 square inch.

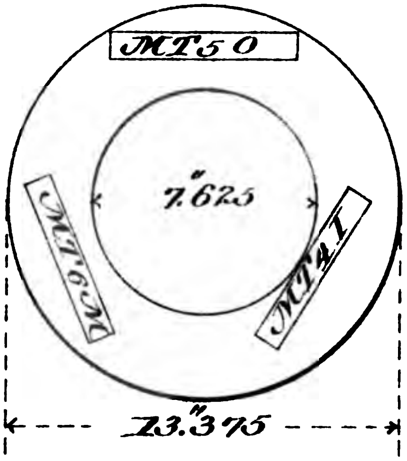
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	.000033	.000033	
7, 500	30, 000	.000933	.000166	.000033	0.	
8, 750	35, 000	.001167	.000234	.000067	.000034	
9, 000	36, 000	.001167	0.	....	....	
9, 250	37, 000	.001233	.000066	....	....	
9, 500	38, 000	.001300	.000067	....	....	
9, 750	39, 000	.001333	.000033	....	....	
10, 000	40, 000	.001400	.000067	.000100	.000033	
10, 250	41, 000	.001467	.000067	....	....	Elastic limit
10, 500	42, 000	.001633	.000066	....	....	
10, 750	43, 000	.002767	.001134	....	....	
11, 000	44, 000	.005167	.002400	....	....	
11, 250	45, 000	.006600	.001433	.004933	.004833	
11, 500	46, 000	.007400	.000800	....	....	
11, 750	47, 000	.008167	.000767	....	....	
12, 000	48, 000	.009067	.001500	....	....	
12, 250	49, 000	.011267	.001600	....	....	
12, 500	50, 000	.012100	.000833	.010300	.005367	
12, 750	51, 000	.012700	.000600	....	....	
13, 000	52, 000	.013667	.000967	....	....	
13, 250	53, 000	.014933	.001266	....	....	
13, 500	54, 000	.016667	.001734	....	....	
13, 750	55, 000	.018167	.001500	....	....	
14, 000	56, 000	.019667	.001500	....	....	
14, 250	57, 000	.020833	.001166	....	....	
14, 500	58, 000	.022667	.001834	....	....	
14, 750	59, 000	.023933	.001266	....	....	
15, 000	60, 000	.025667	.001734	....	....	
15, 500	62, 000	.029333	.003666	....	....	
16, 000	64, 000	.033833	.004500	....	....	
16, 500	66, 000	.038000	.004167	....	....	
17, 000	68, 000	.043667	.005667	....	....	
17, 500	70, 000	.051167	.007500	....	....	
18, 000	72, 000	.060167	.009000	....	....	
18, 500	74, 000	.074667	.014500	....	....	
19, 500	76, 000	.0967	.022330	....	....	
19, 350	77, 400	.1600	.0633	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	77, 400
Elastic limit per square inch of original section	do...	41, 000
Elongation per inch after rupture	inch..	0. 1967
Elongation per inch under strain at elastic limit	do...	.001467
Reduction in diameter at point of rupture	do...	.074
Reduction in area after rupture, per centum of original section		24. 6
Position of rupture		1¼ inches from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.18, ″.22*, ″.[illegible]

Tube No. 36   8" converted Rifle

Additional specimens



No. 2122.

Marks, $\overset{8}{\mathrm{M}}\,\overset{\mathrm{T}*}{\mathrm{T}_4}\,\mathrm{I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000333	.000200	0.	....	
3,750	15,000	.000467	.000134	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
9,000	36,000	.001167	.000034	....	....	
9,250	37,000	.001200	.000033	....	....	
9,500	38,000	.001267	.000067	....	....	Elastic limit.
9,750	39,000	.001367	.000100	....	....	
10,000	40,000	.002567	.001200	....	....	
10,250	41,000	.003567	.001000	....	....	
10,500	42,000	.005733	.002166	....	....	
10,750	43,000	.006667	.000934	....	....	
11,000	44,000	.007867	.001200	....	....	
11,250	45,000	.009000	.001133	....	....	
11,500	46,000	.010167	.001167	....	....	
11,750	47,000	.011100	.000933	....	....	
12,000	48,000	.012167	.001067	....	....	
12,250	49,000	.013333	.001166	....	....	
12,500	50,000	.014500	.001167	....	....	
12,750	51,000	.015833	.001333	....	....	
13,000	52,000	.017000	.001167	....	....	
13,250	53,000	.018367	.001367	....	....	
13,500	54,000	.020000	.001633	....	....	
13,750	55,000	.021667	.001667	....	....	
14,000	56,000	.023333	.001666	....	....	
14,250	57,000	.025000	.001667	....	....	
14,500	58,000	.026333	.001333	....	....	
14,750	59,000	.028167	.001834	....	....	
15,000	60,000	.030667	.002500	....	....	
15,500	62,000	.035000	.004333	....	....	
16,000	64,000	.039333	.004333	....	....	
16,500	66,000	.045500	.006167	....	....	
17,000	68,000	.052333	.006833	....	....	
17,500	70,000	.061667	.009334	....	....	
18,000	72,000	.0733	.011633	....	....	
18,500	74,000	.0967	.0234	....	....	
19,000	76,000	.1067	.0100	....	....	
19,840	79,360	.1633	.0566	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	79,360
Elastic limit per square inch of original section	do...	38,000
Elongation per inch after rupture	inch..	0.2300
Elongation per inch under strain at elastic limit	do...	.001267
Reduction in diameter at point of rupture	do...	.124
Reduction in area after rupture, per centum of original section		39.2
Position of rupture		¾ inch from neck
Character of broken surface		silky, 90 per centum; granular at circumference, 10 per cent
Elongation of inch sections		″.37*, ″.18, ″14.

No. 2123.

Marks, $^{8\,T\,36}_{M\,T,\,O}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001033	.000100	0.	....	
9,000	36,000	.001100	.000067	....	....	
9,250	37,000	.001133	.000033	....	....	
9,500	38,000	.001200	.000067	....	....	Elastic limit.
9,750	39,000	.001300	.000100	....	....	
10,000	40,000	.001933	.000633	....	....	
10,250	41,000	.002667	.000734	....	....	
10,500	42,000	.004933	.002266	....	....	
10,750	43,000	.006000	.001067	....	....	
11,000	44,000	.007133	.001133	....	....	
11,250	45,000	.008067	.000934	....	....	
11,500	46,000	.009333	.001266	....	....	
11,750	47,000	.010233	.000900	....	....	
12,000	48,000	.011367	.001134	....	....	
12,250	49,000	.012667	.001300	....	....	
12,500	50,000	.013667	.001000	....	....	
12,750	51,000	.014667	.001000	....	....	
13,000	52,000	.016000	.001333	....	....	
13,250	53,000	.017067	.001067	....	....	
13,500	54,000	.018500	.001433	....	....	
13,750	55,000	.019833	.001333	....	....	
14,000	56,000	.021400	.001567	....	....	
14,250	57,000	.022900	.001500	....	....	
14,500	58,000	.024833	.001933	....	....	
14,750	59,000	.026667	.001834	....	....	
15,000	60,000	.028233	.001566	....	....	
15,500	62,000	.032267	.004034	....	....	
16,000	64,000	.036667	.004400	....	....	
16,500	66,000	.042500	.005833	....	....	
17,000	68,000	.048667	.006167	....	....	
17,500	70,000	.056167	.007500	....	....	
18,000	72,000	.066667	.010500	....	....	
18,500	74,000	.0833	.016633	....	....	
19,000	76,000	.1100	.0267	....	....	
19,250	77,000	.1500	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	77,000
Elastic limit per square inch of original section	do...	38,000
Elongation per inch after rupture	inch..	0.2233
Elongation per inch under strain at elastic limit	do...	.001200
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44.6
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		".38*, ".16, ".12

No. 2124.

Marks, $\overset{8\ T_{18}}{M\ T_{8}\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000333	.000200	0.	....	
3, 750	15, 000	.000467	.000134	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
9, 000	36, 000	.001167	.000034	....	....	
9, 250	37, 000	.001200	.000033	....	....	
9, 500	38, 000	.001233	.000033	....	....	
9, 750	39, 000	.001300	.000067	....	....	
10, 000	40, 000	.001367	.000067	.000100	.000100	Elastic limit.
10, 250	41, 000	.002700	.001333	....	....	
10, 500	42, 000	.004667	.001967	....	....	
10, 750	43, 000	.006100	.001433	....	....	
11, 000	44, 000	.007300	.001200	....	....	
11, 250	45, 000	.008400	.001100	....	....	
11, 500	46, 000	.009567	.001167	....	....	
11, 750	47, 000	.010667	.001100	....	....	
12, 000	48, 000	.011700	.001033	....	....	
12, 250	49, 000	.012833	.001133	....	....	
12, 500	50, 000	.014000	.001167	....	....	
12, 750	51, 000	.015233	.001233	....	....	
13, 000	52, 000	.016667	.001434	....	....	
13, 250	53, 000	.018000	.001333	....	....	
13, 500	54, 000	.019333	.001333	....	....	
13, 750	55, 000	.020833	.001500	....	....	
14, 000	56, 000	.022500	.001667	....	....	
14, 250	57, 000	.024167	.001667	....	....	
14, 500	58, 000	.025833	.001666	....	....	
14, 750	59, 000	.028000	.002167	....	....	
15, 000	60, 000	.029933	.001933	....	....	
15, 500	62, 000	.033333	.003400	....	....	
16, 000	64, 000	.038333	.005000	....	....	
16, 500	66, 000	.044167	.005834	....	....	
17, 000	68, 000	.050667	.006500	....	....	
17, 500	70, 000	.060000	.009333	....	....	
18, 000	72, 000	.0700	.0100	....	....	
18, 500	74, 000	.0933	.0233	....	....	
19, 000	76, 000	.1367	.0434	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76, 000
Elastic limit per square inch of original section	do...	40, 000
Elongation per inch after rupture	inch..	0. 2233
Elongation per inch under strain at elastic limit	do...	.001367
Reduction in diameter at point of rupture	do...	.134
Reduction in area after rupture, per centum of original section		41. 9
Position of rupture		¼ inch from middle of stem
Character of broken surface		silky; with slight granulation
Elongation of inch sections		″.23, ″.33*, ″.11

No. 992.

Marks, $\overset{8\,T_{s}}{B\,T_{1}\,I}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000067	.000067	0.	....	
2, 500	10, 000	.000167	.000100	0.	....	
3, 750	15, 000	.000367	.000200	0.	....	
5, 000	20, 000	.000533	.000166	0.	....	
6, 250	25, 000	.000700	.000167	0.	....	
7, 500	30, 000	.000833	.000133	0.	....	
8, 750	35, 000	.001000	.000167	0.	....	
10, 000	40, 000	.001200	.000200	0.	....	
10, 250	41, 000	.001233	.000033	....	....	
10, 500	42, 000	.001300	.000067	....	....	
10, 750	43, 000	.001333	.000033	....	....	Elastic limit.
11, 000	44, 000	.007200	.005867	....	....	
11, 250	45, 000	.008067	.000867	.006400	.006400	
11, 500	46, 000	.009000	.000933	....	....	
11, 750	47, 000	.010000	.001000	....	....	
12, 000	48, 000	.011000	.001000	....	....	
12, 250	49, 000	.012133	.001133	....	....	
12, 500	50, 000	.013600	.001467	.011600	.005200	Rested one hour under initial load.
12, 750	51, 000	.014267	.000667	....	....	
13, 000	52, 000	.015733	.001466	....	....	
13, 250	53, 000	.016933	.001200	....	....	
13, 500	54, 000	.018600	.001667	....	....	
13, 750	55, 000	.019700	.001100	....	....	
14, 000	56, 000	.021433	.001733	....	....	
14, 250	57, 000	.022733	.001300	....	....	
14, 500	58, 000	.024333	.001600	....	....	
14, 750	59, 000	.025733	.001400	....	....	
15, 000	60, 000	.027667	.001934	....	....	
15, 500	62, 000	.031333	.003666	....	....	
16, 000	64, 000	.034700	.003367	....	....	
16, 500	66, 000	.039500	.004800	....	....	
17, 000	68, 000	.045333	.005833	....	....	
17, 500	70, 000	.053733	.008400	....	....	
18, 000	72, 000	.062667	.008934	....	....	
18, 500	74, 000	.072000	.009333	....	....	
19, 000	76, 000	.0933	.0213	....	....	
19, 440	77, 760	....	....	....	....	Tensile strength.

General summary.

Specific gravity	7. 8494
Hardness	13. 46
Tensile strength per square inch of original section....pounds..	77, 760
Elastic limit per square inch of original section....do...	43, 000
Elongation per inch after rupture....inch..	0. 2067
Elongation per inch under strain at elastic limit....do...	.001333
Reduction in diameter at point of rupture....do...	.084
Reduction in area after rupture, per centum of original section	27. 6
Position of rupture	½ inch from middle of stem
Character of broken surface	granular; radiating from a dull spot at the circumference
Elongation of inch sections	".18, ".29*, ".15

No. 992½.

Marks, $\frac{8\,T\,{}^{87}}{B\,T_2\,O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000300	.000200	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001167	.000200	.000033	.000033	
9, 000	36, 000	.001200	.000033	....	....	
9, 250	37, 000	.001233	.000033	....	....	
9, 500	38, 000	.001267	.000034	....	....	Elastic limit.
9, 750	39, 000	.007400	.006133	....	....	
10, 000	40, 000	.009167	.001767	.007600	.007567	
10, 250	41, 000	.009667	.000500	....	....	
10, 500	42, 000	.010333	.000666	....	....	
10, 750	43, 000	.011333	.001000	....	....	
11, 000	44, 000	.012667	.001334	....	....	
11, 250	45, 000	.013667	.001000	.011933	.004333	
11, 500	46, 000	.014867	.001200	....	....	
11, 750	47, 000	.015600	.000733	....	....	
12, 000	48, 000	.016933	.001333	....	....	
12, 250	49, 000	.018000	.001067	....	....	
12, 500	50, 000	.019300	.001300	.017300	.005367	
12, 750	51, 000	.020267	.000967	....	....	
13, 000	52, 000	.021567	.001300	....	....	
13, 250	53, 000	.023000	.001433	....	....	
13, 500	54, 000	.024500	.001500	....	....	
13, 750	55, 000	.026333	.001833	....	....	
14, 000	56, 000	.027767	.001434	....	....	
14, 250	57, 000	.029333	.001566	....	....	
14, 500	58, 000	.031200	.001867	....	....	
14, 750	59, 000	.032767	.001567	....	....	
15, 000	60, 000	.035000	.002233	....	....	
15, 500	62, 000	.039867	.004867	....	....	
16, 000	64, 000	.045167	.005300	....	....	
16, 500	66, 000	.050000	.004833	....	....	
17, 000	68, 000	.056667	.006667	....	....	
17, 500	70, 000	.066000	.009333	....	....	
18, 000	72, 000	.078167	.012167	....	....	
18, 500	74, 000	.1000	.021833	....	....	
19, 000	76, 000	.1267	.0267	....	....	
19, 130	76, 520	.1733	.0466	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................pounds.. 76, 520
Elastic limit per square inch of original section ....do... 38, 000
Elongation per inch after rupture....................inch.. 0. 2167
Elongation per inch under strain at elastic limit ....do... .001267
Reduction in diameter at point of rupture....................do... .114
Reduction in area after rupture, per centum of original section.................... 36. 4
Position of rupture ....″.3 from middle of stem
Character of broken surface ....silky, 90 per centum; granular, 10 per centum
Elongation of inch sections....................″.17, ″.33*, ″.15

No. 993.

Marks, $\overset{8\ T_{37}}{B\ T_1\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000233	.000100	0.	....	
3, 750	15, 000	.000433	.000200	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001067	.000134	0.	....	
9, 000	36, 000	.001133	.000066	....	....	
9, 250	37, 000	.001167	.000034	....	....	Elastic limit.
9, 500	38, 000	.001300	.000133	....	....	
9, 750	39, 000	.007967	.006667	....	....	
10, 000	40, 000	.009033	.001066	.007400	.007400	
10, 250	41, 000	.009833	.000800	....	....	
10, 500	42, 000	.010267	.000434	....	....	
10, 750	43, 000	.011000	.000733	....	....	
11, 000	44, 000	.012300	.001300	....	....	
11, 250	45, 000	.013433	.001133	....	....	
11, 500	46, 000	.014367	.000934	....	....	
11, 750	47, 000	.015367	.001000	....	....	
12, 000	48, 000	.016533	.001166	....	....	
12, 250	49, 000	.017667	.001134	....	....	
12, 500	50, 000	.018933	.001266	....	....	
12, 750	51, 000	.020000	.001067	....	....	
13, 000	52, 000	.021500	.001500	....	....	
13, 250	53, 000	.022767	.001267	....	....	
13, 500	54, 000	.024267	.001500	....	....	
13, 750	55, 000	.025667	.001400	....	....	
14, 000	56, 000	.027067	.001400	....	....	
14, 250	57, 000	.028600	.001533	....	....	
14, 500	58, 000	.030367	.001767	....	....	
14, 750	59, 000	.032333	.001966	....	....	
15, 000	60, 000	.034233	.001900	....	....	
15, 500	62, 000	.038100	.003867	....	....	
16, 000	64, 000	.042833	.004733	....	....	
16, 500	66, 000	.048000	.005167	....	....	
17, 000	68, 000	.054333	.006333	....	....	
17, 500	70, 000	.061500	.007167	....	....	
18, 000	72, 000	.070833	.009333	....	....	
18, 500	74, 000	.0800	.009167	....	....	
19, 000	76, 000	.1033	.0233	....	....	
19, 500	78, 000	.1333	.0300	....	....	
19, 540	78, 160	.1667	.0334	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	78, 160
Elastic limit per square inch of original section	do	37, 000
Elongation per inch after rupture	inch	0. 2000
Elongation per inch under strain at elastic limit	do	.001167
Reduction in diameter at point of rupture	do	.074
Reduction in area after rupture, per centum of original section		24. 6
Position of rupture		″.15 from middle of stem
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.19, ″.27*, ″.14

No. 994.

Marks, $^{8\,T_{17}}_{M\,T,\,I}$
Diameter, ″.563.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000233	.000133	0.	....	
3, 750	15, 000	.000400	.000167	0.	....	
5, 000	20, 000	.000567	.000167	0.	....	
6, 250	25, 000	.000733	.000166	0.	....	
7, 500	30, 000	.000900	.000167	0.	....	
8, 750	35, 000	.001067	.000167	0.	....	
9, 000	36, 000	.001100	.000033	....	....	
9, 250	37, 000	.001133	.000033	....	....	
9, 500	38, 000	.001200	.000067	....	....	
9, 750	39, 000	.001200	0.	....	....	
10, 000	40, 000	.001233	.000033	0.	....	
10, 250	41, 000	.001233	0.	....	....	Elastic limit.
10, 500	42, 000	.001333	.000100	....	....	
10, 750	43, 000	.005333	.004000	....	....	
11, 000	44, 000	.009000	.003667	....	....	
11, 250	45, 000	.010000	.001000	.008233	.008233	
11, 500	46, 000	.010833	.000833	....	....	
11, 750	47, 000	.011633	.000800	....	....	
12, 000	48, 000	.012867	.001234	....	....	
12, 250	49, 000	.013933	.001066	....	....	
12, 500	50, 000	.015300	.001367	.013400	.005167	
12, 750	51, 000	.015967	.000667	....	....	
13, 000	52, 000	.016833	.000866	....	....	
13, 250	53, 000	.018100	.001267	....	....	
13, 500	54, 000	.019533	.001433	....	....	
13, 750	55, 000	.020833	.001300	....	....	
14, 000	56, 000	.022667	.001834	....	....	
14, 250	57, 000	.024000	.001333	....	....	
14, 500	58, 000	.025333	.001333	....	....	
14, 750	59, 000	.026667	.001334	....	....	
15, 000	60, 000	.028567	.001900	....	....	
15, 500	62, 000	.032067	.003500	....	....	
16, 000	64, 000	.036000	.003933	....	....	
16, 500	66, 000	.040433	.004433	....	....	
17, 000	68, 000	.045067	.004634	....	....	
17, 500	70, 000	.052500	.007433	....	....	
18, 000	72, 000	.059333	.006833	....	....	
18, 500	74, 000	.069500	.010167	....	....	
19, 000	76, 000	.0867	.0172	....	....	
19, 500	78, 000	.1067	.0200	....	....	
19, 820	79, 280	.1733	.0666	....	....	Tensile strength.

General summary.

Specific gravity	7. 8481
Hardness	12. 66
Tensile strength per square inch of original section....pounds..	79, 280
Elastic limit per square inch of original section....do...	41, 000
Elongation per inch after rupture....inch..	0. 1733
Elongation per inch under strain at elastic limit....do ..	.001233
Reduction in diameter at point of rupture....do...	.053
Reduction in area after rupture, per centum of original section	18. 3
Position of rupture	¼ inch from neck
Character of broken surface	granular; radiating from a dull spot at the circumference
Elongation of inch sections	″.20*, ″.18, ″.14

No. 995.

Marks, $^{8\,T_{37}}_{M\,T_{1}\,O}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000400	.000133	0.	....	
5,000	20,000	.000567	.000167	0.	....	
6,250	25,000	.000733	.000166	0.	....	
7,500	30,000	.000900	.000167	0.	....	
8,750	35,000	.001067	.000167	0.	....	
9,000	36,000	.001133	.000066	....	....	
9,250	37,000	.001167	.000034	....	....	
9,500	38,000	.001200	.000033	....	....	
9,750	39,000	.001233	.000033	....	....	
10,000	40,000	.001333	.000100	.000033	.000033	
10,250	41,000	.001400	.000067	....	....	Elastic limit.
10,500	42,000	.011000	.009600	....	....	
10,750	43,000	.011667	.000667	....	....	
11,000	44,000	.013133	.001466	....	....	
11,250	45,000	.013600	.000467	.011800	.011767	
11,500	46,000	.014500	.000900	....	....	
11,750	47,000	.015600	.001100	....	....	
12,000	48,000	.016533	.000933	....	....	
12,250	49,000	.017867	.001334	....	....	
12,500	50,000	.019333	.001466	.017300	.005500	
12,750	51,000	.019900	.000567	....	....	
13,000	52,000	.020667	.000767	....	....	
13,250	53,000	.022333	.001666	....	....	
18,500	54,000	.024267	.001934	....	....	
13,750	55,000	.026000	.001733	....	....	
14,000	56,000	.027500	.001500	....	....	
14,250	57,000	.028833	.001333	....	....	
14,500	58,000	.030600	.001767	....	....	
14,750	59,000	.032167	.001567	....	....	
15,000	60,000	.034367	.002200	....	....	
15,500	62,000	.037500	.003133	....	....	
16,000	64,000	.042933	.005433	....	....	
16,500	66,000	.048167	.005234	....	....	
17,000	68,000	.055333	.007166	....	....	
17,500	70,000	.063667	.008334	....	....	
18,000	72,000	.073333	.009666	....	....	
18,500	74,000	.0867	.013367	....	....	
19,000	76,000	.1067	.0200	....	....	
19,490	77,960	.1933	.0866	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	77,960
Elastic limit per square inch of original section	do...	41,000
Elongation per inch after rupture	inch..	0.3033
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.154
Reduction in area after rupture, per centum of original section		47.2
Position of rupture		at middle of stem
Character of broken surface		fine silky
Elongation of inch sections		".22, ".48*, ".21

No. 996.

Marks, $\overset{8}{\mathrm{M}}\,\overset{\mathrm{T}_{w}}{\mathrm{T},}\,\mathrm{M}$
Diameter, ″.563.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001100	.000167	0.	....	
9, 000	36, 000	.001133	.000033	....	....	
9, 250	37, 000	.001200	.000067	....	....	
9, 500	38, 000	.001233	.000033	....	....	
9, 750	39, 000	.001267	.000034	....	....	
10, 000	40, 000	.001300	.000033	0.	....	
10, 250	41, 000	.001367	.000067	....	....	Elastic limit.
10, 500	42, 000	{ .001433 { .008700	.000066 .007267	....	....	
10, 750	43, 000	.010000	.001300	....	....	
11, 000	44, 000	.011167	.001167	....	....	
11, 250	45, 000	.011667	.000500	.010000	.010000	
11, 500	46, 000	.012800	.001133	....	....	
11, 750	47, 000	.013500	.000700	....	....	
12, 000	48, 000	.014600	.001100	....	....	
12, 250	49, 000	.015533	.000933	....	....	
12, 500	50, 000	.016733	.001200	.014700	.004700	
12, 750	51, 000	.017467	.000734	....	....	
13, 000	52, 000	.018600	.001133	....	....	
13, 250	53, 000	.019500	.000900	....	....	
13, 500	54, 000	.021000	.001500	....	....	
13, 750	55, 000	.022100	.001100	....	....	
14, 000	56, 000	.023667	.001567	....	....	
14, 250	57, 000	.024500	.000833	....	....	
14, 500	58, 000	.026267	.001767	....	....	
14, 750	59, 000	.027367	.001100	....	....	
15, 000	60, 000	.029000	.001633	....	....	
15, 500	62, 000	.032367	.003367	....	....	
16, 000	64, 000	.036100	.003733	....	....	
16, 500	66, 000	.039833	.003733	....	....	
17, 000	68, 000	.044167	.004334	....	....	
17, 500	70, 000	.049333	.005166	....	....	
18, 000	72, 000	.056667	.007334	....	....	
18, 500	74, 000	.062333	.005666	....	....	
19, 000	76, 000	.071667	.009334	....	....	
19, 500	78, 000	.0833	.011633	....	....	
20, 000	80, 000	.1033	.0200	....	....	
20, 500	82, 000	.1400	.0367	....	....	
20, 580	82, 320	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 82, 320
Elastic limit per square inch of original section..............................do... 41, 000
Elongation per inch after rupture..............................inch.. 0. 1800
Elongation per inch under strain at elastic limit..............................do... .001367
Reduction in diameter at point of rupture..............................do... .053
Reduction in area after rupture, per centum of original section.............................. 18.2
Position of rupture..............................″.3 from neck
Character of broken surface, dull-colored furrowed surface; small granular section near circumference
Elongation of inch sections..............................″.20*, ″.16, ″.18

No. 995.

Marks, $\overset{8}{\text{M}}\,\overset{\text{T}_{8}}{\text{T}_{7}}\,\text{O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000400	.000133	0.	....	
5,000	20,000	.000567	.000167	0.	....	
6,250	25,000	.000733	.000166	0.	....	
7,500	30,000	.000900	.000167	0.	....	
8,750	35,000	.001067	.000167	0.	....	
9,000	36,000	.001133	.000066	....	....	
9,250	37,000	.001167	.000034	....	....	
9,500	38,000	.001200	.000033	....	....	
9,750	39,000	.001233	.000033	....	....	
10,000	40,000	.001333	.000100	.000033	.000033	
10,250	41,000	.001400	.000067	....	....	Elastic limit.
10,500	42,000	.011000	.009600	....	....	
10,750	43,000	.011667	.000667	....	....	
11,000	44,000	.013133	.001466	....	....	
11,250	45,000	.013600	.000467	.011800	.011767	
11,500	46,000	.014500	.000900	....	....	
11,750	47,000	.015600	.001100	....	....	
12,000	48,000	.016533	.000933	....	....	
12,250	49,000	.017867	.001334	....	....	
12,500	50,000	.019333	.001466	.017300	.005500	
12,750	51,000	.019900	.000567	....	....	
13,000	52,000	.020667	.000767	....	....	
13,250	53,000	.022333	.001666	....	....	
13,500	54,000	.024267	.001934	....	....	
13,750	55,000	.026000	.001733	....	....	
14,000	56,000	.027500	.001500	....	....	
14,250	57,000	.028833	.001333	....	....	
14,500	58,000	.030600	.001767	....	....	
14,750	59,000	.032167	.001567	....	....	
15,000	60,000	.034367	.002200	....	....	
15,500	62,000	.037500	.003133	....	....	
16,000	64,000	.042933	.005433	....	....	
16,500	66,000	.048167	.005234	....	....	
17,000	68,000	.055333	.007166	....	....	
17,500	70,000	.063667	.008334	....	....	
18,000	72,000	.073333	.009666	....	....	
18,500	74,000	.0867	.013367	....	....	
19,000	76,000	.1067	.0200	....	....	
19,490	77,960	.1933	.0866	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	77,960
Elastic limit per square inch of original section	do...	41,000
Elongation per inch after rupture	inch..	0.3033
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.154
Reduction in area after rupture, per centum of original section		47.2
Position of rupture		at middle of stem
Character of broken surface		fine silky
Elongation of inch sections		″.22, ″.48*, ″.21

No. 996.

Marks, $\overset{8\,T''}{M\,T,M}$
Diameter, ″.563.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001100	.000167	0.	....	
9, 000	36, 000	.001133	.000033	....	....	
9, 250	37, 000	.001200	.000067	....	....	
9, 500	38, 000	.001233	.000033	....	....	
9, 750	39, 000	.001267	.000034	....	....	
10, 000	40, 000	.001300	.000033	0.	....	
10, 250	41, 000	.001367	.000067	....	....	Elastic limit.
10, 500	42, 000	.001433	.000066	....	....	
		.008700	.007267	....	....	
10, 750	43, 000	.010000	.001300	....	....	
11, 000	44, 000	.011167	.001167	....	....	
11, 250	45, 000	.011667	.000500	.010000	.010000	
11, 500	46, 000	.012800	.001133	....	....	
11, 750	47, 000	.013500	.000700	....	....	
12, 000	48, 000	.014600	.001100	....	....	
12, 250	49, 000	.015533	.000933	....	....	
12, 500	50, 000	.016733	.001200	.014700	.004700	
12, 750	51, 000	.017467	.000734	....	....	
13, 000	52, 000	.018600	.001133	....	....	
13, 250	53, 000	.019500	.000900	....	....	
13, 500	54, 000	.021000	.001500	....	....	
13, 750	55, 000	.022100	.001100	....	....	
14, 000	56, 000	.023667	.001567	....	....	
14, 250	57, 000	.024500	.000833	....	....	
14, 500	58, 000	.026267	.001767	....	....	
14, 750	59, 000	.027367	.001100	....	....	
15, 000	60, 000	.029000	.001633	....	....	
15, 500	62, 000	.032367	.003367	....	....	
16, 000	64, 000	.036100	.003733	....	....	
16, 500	66, 000	.039833	.003733	....	....	
17, 000	68, 000	.044167	.004334	....	....	
17, 500	70, 000	.049333	.005166	....	....	
18, 000	72, 000	.056667	.007334	....	....	
18, 500	74, 000	.062333	.005666	....	....	
19, 000	76, 000	.071667	.009334	....	....	
19, 500	78, 000	.0833	.011633	....	....	
20, 000	80, 000	.1033	.0200	....	....	
20, 500	82, 000	.1400	.0367	....	....	
20, 580	82, 320	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 82, 320
Elastic limit per square inch of original section ....do... 41, 000
Elongation per inch after rupture ....inch.. 0. 1800
Elongation per inch under strain at elastic limit ....do... .001367
Reduction in diameter at point of rupture ....do... .053
Reduction in area after rupture, per centum of original section 18. 3
Position of rupture ....″.3 from neck
Character of broken surface, dull-colored furrowed surface; small granular section near circumference
Elongation of inch sections ....″.20*, ″.16, ″.18

[Additional specimens.]

No. 2128.

Marks, $\frac{8\,T_{37}}{B\,T_4\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001100	.000133	0.	....	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001167	.000034	....	....	
9,500	38,000	.001200	.000033	....	....	
9,750	39,000	.001233	.000033	....	....	
10,000	40,000	.001267	.000034	0.	......	
10,250	41,000	.001300	.000033	....	......	
10,500	42,000	.001367	.000067	....	....	
10,750	43,000	.001400	.000033	....	....	Elastic limit.
11,000	44,000	.010867	.009467	....	....	
11,250	45,000	.011533	.000666	....	....	
11,500	46,000	.012433	.000900	....	....	
11,750	47,000	.013533	.001100	....	....	
12,000	48,000	.015133	.001600	....	....	
12,250	49,000	.016367	.001234	....	....	
12,500	50,000	.017833	.001466	....	....	
13,000	52,000	.021000	.003167	....	....	
13,500	54,000	.024500	.003500	....	....	
14,000	56,000	.028000	.003500	....	....	
14,500	58,000	.032000	.004000	....	....	
15,000	60,000	.036667	.004667	....	....	
15,500	62,000	.043333	.006666	....	....	
16,000	64,000	.051333	.008000	....	....	
16,500	66,000	.057667	.006334	....	....	
17,000	68,000	.0700	.012333	....	....	
17,500	70,000	.0900	.0200	....	....	
18,000	72,000	.1267	.0367	....	....	
18,060	72,240	.1667	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	72,240
Elastic limit per square inch of original section	do...	43,000
Elongation per inch after rupture	inch..	0.2433
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44.6
Position of rupture		1 inch from neck
Character of broken surface		silky
Elongation of inch sections		″.37*, ″.23, ″.13

No. 2129.

Marks, $^{8\,T}_{B\,T}$ O
Diameter, ".565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000400	.000133	0.	....	
5,000	20,000	.000533	.000133	0.	....	
6,250	25,000	.000667	.000134	0.	....	
7,500	30,000	.000867	.000200	0.	....	
8,750	35,000	.001000	.000133	0.	....	
10,000	40,000	.001200	.000200	0.	....	
10,250	41,000	.001233	.000033	....	....	
10,500	42,000	.001267	.000034	....	....	
10,750	43,000	.001333	.000066	....	....	
11,000	44,000	.001367	.000034	....	....	
11,250	45,000	.001400	.000033	.000033	.000033	
11,500	46,000	.001433	.000033	....	....	
11,750	47,000	.001500	.000067	....	....	Elastic limit.
12,000	48,000	.004983	.003483	....	....	
12,250	49,000	.015700	.010767	....	....	
12,500	50,000	.016800	.001100	....	....	
12,750	51,000	.018200	.001400	....	....	
13,000	52,000	.019583	.001338	....	....	
13,250	53,000	.020433	.000900	....	....	
13,500	54,000	.021800	.001367	....	....	
13,750	55,000	.023067	.001267	....	....	
14,000	56,000	.024667	.001600	....	....	
14,250	57,000	.026333	.001666	....	....	
14,500	58,000	.028067	.001734	....	....	
14,750	59,000	.029667	.001600	....	....	
15,000	60,000	.031533	.001866	....	....	
15,500	62,000	.035000	.003467	....	....	
16,000	64,000	.040000	.005000	....	....	
16,500	66,000	.045667	.005667	....	....	
17,000	68,000	.051500	.005833	....	....	
17,500	70,000	.058333	.006833	....	....	
18,000	72,000	.068333	.010000	....	....	
18,500	74,000	.0800	.011667	....	....	
19,000	76,000	.1000	.0200	....	....	
19,500	78,000	.1733	.0733	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	78,000
Elastic limit per square inch of original section	do...	47,000
Elongation per inch after rupture	inch..	0.2333
Elongation per inch under strain at elastic limit	do...	.001500
Reduction in diameter at point of rupture	do...	.125
Reduction in area after rupture, per centum of original section		39.2
Position of rupture		".45 from middle of stem
Character of broken surface		silky; cracks opened in surface of stem
Elongation of inch sections		".21, ".35*, ".14

No. 2130.

Marks, $_{B}{}^{8}T_{6}{}^{T_{17}}M$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000367	.000234	0.	....	
3, 750	15, 000	.000533	.000166	0.	....	
5, 000	20, 000	.000700	.000167	0.	....	
6, 250	25, 000	.000867	.000167	0.	....	
7, 500	30, 000	.001033	.000166	.000033	.000033	
8, 750	35, 000	.001167	.000134	.000033	0.	
9, 000	36, 000	.001200	.000033	....	....	
9, 250	37, 000	.001233	.000033	....	....	
9, 500	38, 000	.001267	.000034	....	....	
9, 750	39, 000	.001300	.000033	....	....	
10, 000	40, 000	.001400	.000100	.000067	.000034	
10, 250	41, 000	.001433	.000033	....	....	Elastic limit.
10, 500	42, 000	.010333	.008900	....	....	
10, 750	43, 000	.010933	.000600	....	....	
11, 000	44, 000	.012033	.001100	....	....	
11, 250	45, 000	.013033	.001000	....	....	
11, 500	46, 000	.014067	.001034	....	....	
11, 750	47, 000	.015333	.001266	....	....	
12, 000	48, 000	.016733	.001400	....	....	
12, 250	49, 000	.018067	.001334	....	....	
12, 500	50, 000	.019333	.001266	....	....	
12, 750	51, 000	.020733	.001400	....	....	
13, 000	52, 000	.022000	.001267	....	....	
13, 250	53, 000	.023733	.001733	....	....	
13, 500	54, 000	.025433	.001700	....	....	
13, 750	55, 000	.027067	.001634	....	....	
14, 000	56, 000	.029000	.001933	....	....	
14, 250	57, 000	.030800	.001800	....	....	
14, 500	58, 000	.032833	.002033	....	....	
14, 750	59, 000	.034700	.001867	....	....	
15, 000	60, 000	.037433	.002733	....	....	
15, 500	62, 000	.042833	.005400	....	....	
16, 000	64, 000	.049333	.006500	....	....	
16, 500	66, 000	.057000	.007667	....	....	
17, 000	68, 000	.068000	.011000	....	....	
17, 500	70, 000	.0833	.0153	....	....	
18, 000	72, 000	.1033	.0200	....	....	
18, 490	73, 960	.1567	.0534	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 73, 960
Elastic limit per square inch of original section ....do... 41, 000
Elongation per inch after rupture ....inch.. 0. 2133
Elongation per inch under strain at elastic limit ....do... 0. 001433
Reduction in diameter at point of rupture...do... .104
Reduction in area after rupture, per centum of original section.............................. 33. 5
Position of rupture ....″.95 from neck
Character of broken surface, granular, 50 per centum; dull silky, 50 per centum; cracks opened in surface of stem.
Elongation of inch sections ....″.29*, ″. 22, ″.13

No. 2131.

Marks, $\overset{8}{M}\,\overset{T_{17}}{T_4}I$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000233	.000133	0.	....	
3, 750	15, 000	.000433	.000200	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000733	.000133	0.	....	
7, 500	30, 000	.000900	.000167	0.	....	
8, 750	35, 000	.001067	.000167	0.	....	
9, 000	36, 000	.001133	.000066	....	....	
9, 250	37, 000	.001167	.000034	....	....	
9, 500	38, 000	.001200	.000033	....	....	
9, 750	39, 000	.001233	.000033	....	....	
10, 000	40, 000	.001267	.000034	0.	....	
10, 250	41, 000	.001300	.000033	....	....	
10, 500	42, 000	.001333	.000033	....	....	
10, 750	43, 000	.001367	.000034	....	....	Elastic limit.
11, 000	44, 000	.015533	.014166	....	....	
11, 250	45, 000	.016233	.000700	....	....	
11, 500	46, 000	.017500	.001267	....	....	
11, 750	47, 000	.018700	.001200	....	....	
12, 000	48, 000	.020133	.001433	....	....	
12, 250	49, 000	.021700	.001567	....	....	
12, 500	50, 000	.023200	.001500	....	....	
12, 750	51, 000	.024867	.001667	....	....	
13, 000	52, 000	.026667	.001800	....	....	
13, 250	53, 000	.028167	.001500	....	....	
13, 500	54, 000	.029867	.001700	....	....	
13, 750	55, 000	.031667	.001800	....	....	
14, 000	56, 000	.034333	.002666	....	....	
14, 250	57, 000	.036367	.002034	....	....	
14, 500	58, 000	.039333	.002966	....	....	
14, 750	59, 000	.042167	.002834	....	....	
15, 000	60, 000	.045500	.003333	....	....	
15, 500	62, 000	.051500	.006000	....	....	
16, 000	64, 000	.059500	.008000	....	....	
16, 500	66, 000	.0700	.0105	....	....	
17, 000	68, 000	.0867	.0167	....	....	
17, 500	70, 000	.1067	.0200	....	....	
18, 000	72, 000	.1600	.0533	....	....	
18, 030	72, 120	.1833	.0233	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	72, 120
Elastic limit per square inch of original section........do...	43, 000
Elongation per inch after rupture........inch..	0. 2767
Elongation per inch under strain at elastic limit........do...	.001367
Reduction in diameter at point of rupture ....do...	.154
Reduction in area after rupture, per centum of original section........	47. 2
Position of rupture........	at middle of stem
Character of broken surface........	silky; opened cracks in surface of stem
Elongation of inch sections........	″.19, ″.44*, ″.20

No. 2132.

Marks, $\overset{8\ T_{37}}{M\ T_{1}\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 200	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
9, 000	36, 000	.001167	.000034	....	....	
9, 250	37, 000	.001167	0.	....	....	
9, 500	38, 000	.001200	.000033	....	....	
9, 750	39, 000	.001233	.000033	....	....	
10, 000	40, 000	.001267	.000034	....	....	
10, 250	41, 000	.001300	.000033	....	....	
10, 500	42, 000	.001367	.000067	....	....	
10, 750	43, 000	.001400	.000033	....	....	Elastic limit.
11, 000	44, 000	.011667	.010267	....	....	
11, 250	45, 000	.012000	.000333	....	....	
11, 500	46, 000	.012833	.000833	....	....	
11, 750	47, 000	.013833	.001000	....	....	
12, 000	48, 000	.015400	.001567	....	....	
12, 250	49, 000	.016333	.000933	....	....	
12, 500	50, 000	.018000	.001667	....	....	
12, 750	51, 000	.019333	.001333	....	....	
13, 000	52, 000	.021167	.001834	....	....	
13, 250	53, 000	.022667	.001500	....	....	
13, 500	54, 000	.024333	.001666	....	....	
13, 750	55, 000	.025667	.001334	....	....	
14, 000	56, 000	.027000	.001333	....	....	
14, 250	57, 000	.028733	.001733	....	....	
14, 500	58, 000	.031000	.002267	....	....	
14, 750	59, 000	.032767	.001767	....	....	
15, 000	60, 000	.035267	.002500	....	....	
15, 500	62, 000	.040667	.005400	....	....	
16, 000	64, 000	.046167	.005500	....	....	
16, 500	66, 000	.053000	.006833	....	....	
17, 000	68, 000	.062333	.009333	....	....	
17, 500	70, 000	.074000	.011667	....	....	
18, 000	72, 000	.0967	.0227	....	....	
18, 500	74, 000	.1267	.0300	....	....	
18, 700	74, 800	.1767	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	74, 800
Elastic limit per square inch of original section	do...	43, 000
Elongation per inch after rupture	inch..	0. 2833
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.184
Reduction in area after rupture, per centum of original section		54. 6
Position of rupture		″.20 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.21, ″.47*, ″.17

No. 2133.

Marks, $\overset{8T_{7}}{MT_{6}M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000433	.000133	0.	....	
5,000	20,000	.000567	.000134	0.	....	
6,250	25,000	.000733	.000166	0.	....	
7,500	30,000	.000900	.000167	0.	....	
8,750	35,000	.001067	.000167	0.	....	
9,000	36,000	.001100	.000033	....	....	
9,250	37,000	.001133	.000033	....	....	
9,500	38,000	.001167	.000034	....	....	
9,750	39,000	.001200	.000033	....	....	
10,000	40,000	.001233	.000033	0.	....	
10,250	41,000	.001267	.000034	....	....	Elastic limit.
10,500	42,000	.012700	.011433	....	....	
10,750	43,000	.013167	.000467	....	....	
11,000	44,000	.014067	.000900	....	....	
11,250	45,000	.014933	.000866	....	....	
11,500	46,000	.016100	.001167	....	....	
11,750	47,000	.017367	.001267	....	....	
12,000	48,000	.019033	.001666	....	....	
12,250	49,000	.020500	.001467	....	....	
12,500	50,000	.021800	.001300	....	....	
12,750	51,000	.023333	.001533	....	....	
13,000	52,000	.025000	.001667	....	....	
13,250	53,000	.026500	.001500	....	....	
13,500	54,000	.028333	.001833	....	....	
13,750	55,000	.029733	.001400	....	....	
14,000	56,000	.032000	.002267	....	....	
14,250	57,000	.033733	.001733	....	....	
14,500	58,000	.036167	.002434	....	....	
14,750	59,000	.038333	.002166	....	....	
15,000	60,000	.041167	.002834	....	....	
15,500	62,000	.047333	.006166	....	....	
16,000	64,000	.054000	.006667	....	....	
16,500	66,000	.062833	.008833	....	....	
17,000	68,000	.0733	.010467	....	....	
17,500	70,000	.0900	.0167	....	....	
18,000	72,000	.1133	.0233	....	....	
18,390	73,560	.1900	.0767	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	73,560
Elastic limit per square inch of original section	do...	41,000
Elongation per inch after rupture	inch..	0.2733
Elongation per inch under strain at elastic limit	do...	.001267
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44.6
Position of rupture		1″.1 from neck
Character of broken surface		silky; traces of granulation
Elongation of inch sections		″.37*, ″.26, ″.19

No. 2092.

Marks, $\overset{8\ T_{a}}{B\ T_{1}\ 1}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000433	.000133	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001067	.000134	0.	....	
10, 000	40, 000	.001233	.000166	0.	....	
10, 250	41, 000	.001233	0.	....	....	
10, 500	42, 000	.001300	.000067	....	....	
10, 750	43, 000	.001333	.000033	....	....	
11, 000	44, 000	.001400	.000067	....	....	Elastic limit.
11, 250	45, 000	.002500	.001100	....	....	
11, 500	46, 000	.005000	.002500	....	....	
11, 750	47, 000	.006667	.001667	....	....	
12, 000	48, 000	.008000	.001333	....	....	
12, 250	49, 000	.009000	.001000	....	....	
12, 500	50, 000	.010267	.001267	....	....	
12, 750	51, 000	.011067	.000800	....	....	
13, 000	52, 000	.012367	.001300	....	....	
13, 250	53, 000	.013333	.000966	....	....	
13, 500	54, 000	.014467	.001134	....	....	
13, 750	55, 000	.015833	.001366	....	....	
14, 000	56, 000	.017267	.001434	....	....	
14, 250	57, 000	.018600	.001333	....	....	
14, 500	58, 000	.020000	.001400	....	....	
14, 750	59, 000	.021333	.001333	....	....	
15, 000	60, 000	.022833	.001500	....	....	
15, 500	62, 000	.026233	.003400	....	....	
16, 000	64, 000	.030000	.003767	....	....	
16, 500	66, 000	.034000	.004000	....	....	
17, 000	68, 000	.038067	.004067	....	....	
17, 500	70, 000	.044000	.005933	....	....	
18, 000	72, 000	.050667	.006667	....	....	
18, 500	74, 000	.060000	.009333	....	....	
19, 000	76, 000	.0633	.0133	....	....	
19, 500	78, 000	.1000	.0267	....	....	
19, 910	79, 640	.1567	.0567	....	....	Tensile strength.

General summary.

Specific gravity	7. 8009
Hardness	14. 33
Tensile strength per square inch of original section ...pounds..	79, 640
Elastic limit per square inch of original section...do ..	44, 000
Elongation per inch after rupture ...inch..	0. 2500
Elongation per inch under strain at elastic limit...do...	.001400
Reduction in diameter at point of rupture ...do...	.184
Reduction in area after rupture, per centum of original section	54. 6
Position of rupture	1″.05 from neck
Character of broken surface	silky
Elongation of inch sections	″.42*, ″.22, ″.11

No. 2093.

Marks, $\overset{8}{\text{B}}\,\overset{\text{T}_{m}}{\text{T}_{3}}\,\text{O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000233	.000100	0.	....	
3,750	15,000	.000400	.000167	0.	....	
5,000	20,000	.000567	.000167	0.	....	
6,250	25,000	.000733	.000166	0	....	
7,500	30,000	.000900	.000167	0	....	
8,750	35,000	.001067	.000167	0.	....	
10,000	40,000	.001233	.000166	0.	....	
10,250	41,000	.001267	.000034	....	....	
10,500	42,000	.001300	.000033	....	....	
10,750	43,000	.001333	.000033	....	....	
11,000	44,000	.001367	.000034	....	....	
11,250	45,000	.001400	.000033	0.	....	
11,500	46,000	.001467	.000067	....	....	Elastic limit.
11,750	47,000	.001567	.000100	....	....	
12,000	48,000	.002500	.000933	....	....	
12,250	49,000	.004133	.001633	....	....	
12,500	50,000	.006000	.001867	....	....	
12,750	51,000	.006700	.000700	....	....	
13,000	52,000	.007733	.001033	....	....	
13,250	53,000	.008733	.001000	....	....	
13,500	54,000	.009700	.000967	....	....	
13,750	55,000	.010500	.000800	....	....	
14,000	56,000	.011500	.001000	....	....	
14,250	57,000	.012500	.001000	....	....	
14,500	58,000	.013667	.001167	....	....	
14,750	59,000	.014667	.001000	....	....	
15,000	60,000	.015733	.001067	....	....	
15,500	62,000	.018333	.002600	....	....	
16,000	64,000	.020433	.002100	....	....	
16,500	66,000	.023733	.003300	....	....	
17,000	68,000	.026333	.002600	....	....	
17,500	70,000	.029667	.003334	....	....	
18,000	72,000	.033333	.003666	....	....	
18,500	74,000	.037767	.004434	....	....	
19,000	76,000	.043333	.005566	....	....	
19,500	78,000	.049333	.006000	....	....	
20,000	80,000	.056167	.006834	....	....	
20,500	82,000	.067000	.010833	....	....	
21,000	84,000	.0867	.0197	....	....	
21,500	86,000	.1200	.0333	....	....	
21,550	86,200	.1500	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	86,200
Elastic limit per square inch of original section	do...	46,000
Elongation per inch after rupture	inch..	0.2367
Elongation per inch under strain at elastic limit	do...	.001467
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		″.20 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.21, ″.38*, ″.12

No. 2094.

Marks, $^{8\ T_{18}}_{B\ T_3\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000467	.000134	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000833	.000200	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
8, 750	35, 000	.001167	.000167	0.	....	
10, 000	40, 000	.001367	.000200	0.	....	
10, 250	41, 000	.001400	.000033	....	....	Elastic limit.
10, 500	42, 000	.001500	.000100	....	....	
10, 750	43, 000	.006000	.004500	....	....	
11, 000	44, 000	.008100	.002100	....	....	
11, 250	45, 000	.009000	.000900	....	....	
11, 500	46, 000	.010000	.001000	....	....	
11, 750	47, 000	.010800	.000800	....	....	
12,-000	48, 000	.011933	.001133	....	....	
12, 250	49, 000	.013000	.001067	....	....	
12, 500	50, 000	.014167	.001167	....	....	
12, 750	51, 000	.015333	.001166	....	....	
13, 000	52, 000	.016667	.001334	....	....	
13, 250	53, 000	.018000	.001333	....	....	
13, 500	54, 000	.019167	.001167	....	....	
13, 750	55, 000	.020667	.001500	....	....	
14, 000	56, 000	.022333	.001666	....	....	
14, 250	57, 000	.023400	.001067	....	....	
14, 500	58, 000	.025167	.001767	....	....	
14, 750	59, 000	.027167	.002000	....	....	
15, 000	60, 000	.029000	.001833	....	....	
15, 500	62, 000	.032700	.003700	....	....	
16, 000	64, 000	.037067	.004367	....	....	
16, 500	66, 000	.042500	.005433	....	....	
17, 000	68, 000	.048667	.006167	....	....	
17, 500	70, 000	.056333	.007666	....	....	
18, 000	72, 000	.066667	.010334	....	....	
18, 500	74, 000	.0900	.023333	....	....	
19, 000	76, 000	.1233	.0333	....	....	
19, 140	76, 560	.1633	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76, 560
Elastic limit per square inch of original section	do...	41, 000
Elongation per inch after rupture	inch..	0. 2667
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section		52. 2
Position of rupture		¼ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.18, ″.47*, ″.15

No. 2095.

Marks, $\overset{8\,T_{8}}{M\,T,\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000200	.000100	0.	....	
3, 750	15, 000	.000367	.000167	0.	....	
5, 000	20, 000	.000533	.000166	0.	....	
6, 250	25, 000	.000700	.000167	0.	....	
7, 500	30, 000	.000867	.000167	0.	....	
8, 750	35, 000	.001033	.000166	0.	....	
10, 000	40, 000	.001200	.000167	0.	....	
10, 250	41, 000	.001233	.000033	....	....	
10, 500	42, 000	.001300	.000067	....	....	Elastic limit.
10, 750	43, 000	.001433	.000133	....	....	
11, 000	44, 000	.004400	.002967	....	....	
11, 250	45, 000	.006867	.002467	....	....	
11, 500	46, 000	.007400	.000533	....	....	
11, 750	47, 000	.008267	.000867	....	....	
12, 000	48, 000	.009367	.001100	....	....	
12, 250	49, 000	.010233	.000866	....	....	
12, 500	50, 000	.011367	.001134	....	....	
12, 750	51, 000	.012267	.000900	....	....	
13, 000	52, 000	.013167	.000900	....	....	
13, 250	53, 000	.014200	.001033	....	....	
13, 500	54, 000	.015167	.000967	....	....	
13, 750	55, 000	.016233	.001066	....	....	
14, 000	56, 000	.017533	.001300	....	....	
14, 250	57, 000	.018667	.001134	....	....	
14, 500	58, 000	.019933	.001266	....	....	
14, 750	59, 000	.021367	.001434	....	....	
15, 000	60, 000	.022833	.001466	....	....	
15, 500	62, 000	.026000	.003167	....	....	
16, 000	64, 000	.028667	.002667	....	....	
16, 500	66, 000	.032833	.004166	....	....	
17, 000	68, 000	.036667	.003834	....	....	
17, 500	70, 000	.041400	.004733	....	....	
18, 000	72, 000	.046833	.005433	....	....	
18, 500	74, 000	.053000	.006167	....	....	
19, 000	76, 000	.061500	.008500	....	....	
19, 500	78, 000	.072000	.010500	....	....	
20, 000	80, 000	.0933	.0213	....	....	
20, 500	82, 000	.1200	.0267	....	....	
20, 610	82, 440	.1633	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	82, 440
Elastic limit per square inch of original section	do...	42, 000
Elongation per inch after rupture	inch..	0. 2433
Elongation per inch under strain at elastic limit	do...	.001300
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		″.95 from neck
Character of broken surface		silky
Elongation of inch sections		″.41*, ″.19, ″.13

No. 2096.

Marks, $\overset{\text{S T*}}{\text{M T, O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000333	.000200	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000833	.000166	0.	....	
7,500	30,000	.001000	.000167	.000033	.000033	
8,750	35,000	.001133	.000133	.000067	.000034	
10,000	40,000	.001333	.000200	.000067	0.	Elastic limit.
10,250	41,000	.004000	.002667	....	....	
10,500	42,000	.005367	.001367	....	....	
10,750	43,000	.006367	.001000	....	....	
11,000	44,000	.007467	.001100	....	....	
11,250	45,000	.008533	.001066	....	....	
11,500	46,000	.009567	.001034	....	....	
11,750	47,000	.010567	.001000	....	....	
12,000	48,000	.011500	.000933	....	....	
12,250	49,000	.012500	.001000	....	....	
12,500	50,000	.013500	.001000	....	....	
12,750	51,000	.014467	.000967	....	....	
13,000	52,000	.015633	.001166	....	....	
13,250	53,000	.016767	.001134	....	....	
13,500	54,000	.018100	.001333	....	....	
13,750	55,000	.019133	.001033	....	....	
14,000	56,000	.020400	.001267	....	....	
14,250	57,000	.021433	.001033	....	....	
14,500	58,000	.023000	.001567	....	....	
14,750	59,000	.024333	.001333	....	....	
15,000	60,000	.026167	.001834	....	....	
15,500	62,000	.029667	.003500	....	....	
16,000	64,000	.033000	.003333	....	....	
16,500	66,000	.037167	.004167	....	....	
17,000	68,000	.041800	.004633	....	....	
17,500	70,000	.047667	.005867	....	....	
18,000	72,000	.054167	.006500	....	....	
18,500	74,000	.062500	.008333	....	....	
19,000	76,000	.074833	.012333	....	....	
19,500	78,000	.0967	.021867	....	....	
19,960	79,840	.1400	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	79,840
Elastic limit per square inch of original section	do ..	40,000
Elongation per inch after rupture	inch..	0.2200
Elongation per inch under strain at elastic limit	do...	.001333
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.43*, ″.16, ″.10

No. 2097.

Marks, $\overset{8}{\mathrm{M}}\overset{\mathrm{T_s}}{\mathrm{T}}$, M
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000400	.000133	0.	....	
5,000	20,000	.000567	.000167	0.	....	
6,250	25,000	.000733	.000166	0.	....	
7,500	30,000	.000900	.000167	0.	....	
8,750	35,000	.001067	.000167	0.	....	
10,000	40,000	.001233	.000166	0.	....	
10,250	41,000	.001267	.000034	....	....	
10,500	42,000	.001333	.000066	....	....	
10,750	43,000	.001400	.000067	....	....	
11,000	44,000	.001467	.000067	....	....	Elastic limit.
11,250	45,000	.001700	.000233	....	....	
11,500	46,000	.004133	.002433	....	....	
11,750	47,000	.005600	.001467	....	....	
12,000	48,000	.006533	.000933	....	....	
12,250	49,000	.007400	.000867	....	....	
12,500	50,000	.008267	.000867	....	....	
12,750	51,000	.009167	.000900	....	....	
13,000	52,000	.010333	.001166	....	....	
13,250	53,000	.011267	.000934	....	....	
13,500	54,000	.012167	.000900	....	....	
13,750	55,000	.013000	.000833	....	....	
14,000	56,000	.014233	.001233	....	....	
14,250	57,000	.015000	.000767	....	....	
14,500	58,000	.016200	.001200	....	....	
14,750	59,000	.017133	.000933	....	....	
15,000	60,000	.018533	.001400	....	....	
15,500	62,000	.020767	.002234	....	....	
16,000	64,000	.024000	.003233	....	....	
16,500	66,000	.026633	.002633	....	....	
17,000	68,000	.030000	.003367	....	....	
17,500	70,000	.033333	.003333	....	....	
18,000	72,000	.037333	.004000	....	....	
18,500	74,000	.042333	.005000	....	....	
19,000	76,000	.048333	.006000	....	....	
19,500	78,000	.055667	.007334	....	....	
20,000	80,000	.066667	.011000	....	....	
20,500	82,000	.0800	.013333	....	....	
21,000	84,000	.1067	.0267	....	....	
21,300	85,200	.1667	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	85,200
Elastic limit per square inch of original section	do...	44,000
Elongation per inch after rupture	inch..	0.2567
Elongation per inch under strain at elastic limit	do...	.001467
Reduction in diameter at point of rupture	do...	.154
Reduction in area after rupture, per centum of original section		47.2
Position of rupture		″.2 from middle of stem
Character of broken surface		silky; traces of granulation
Elongation of inch sections		″.17, ″.44*, ″.16

No. 2134.

Marks, $\overset{8\ T_{30}}{B\ T_1\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
9, 000	36, 000	.001133	0.	....	....	
9, 250	37, 000	.001167	.000034	....	....	
9, 500	38, 000	.001200	.000033	....	....	
9, 750	39, 000	.001233	.000033	....	....	
10, 000	40, 000	.001267	.000034	0.	....	
10, 250	41, 000	.001300	.000033	....	....	
10, 500	42, 000	.001367	.000067	....	....	
10, 750	43, 000	.001400	.000033	....	....	
11, 000	44, 000	.001433	.000033	....	....	
11, 250	45, 000	.001433	0.	0.	....	
11, 500	46, 000	.001467	.000034	....	....	Elastic limit.
11, 750	47, 000	.005667	.004200	....	....	
12, 000	48, 000	.011600	.005933	....	....	
12, 250	49, 000	.012333	.000733	....	....	
12, 500	50, 000	.013400	.001067	....	....	
12, 750	51, 000	.014533	.001133	....	....	
13, 000	52, 000	.016167	.001634	....	....	
13, 250	53, 000	.017667	.001500	....	....	
13, 500	54, 000	.019033	.001366	....	....	
13, 750	55, 000	.020667	.001634	....	....	
14, 000	56, 000	.022033	.001366	....	....	
14, 250	57, 000	.023733	.001700	....	....	
14, 500	58, 000	.025500	.001767	....	....	
14, 750	59, 000	.027500	.002000	....	....	
15, 000	60, 000	.029500	.002000	....	....	
15, 500	62, 000	.033733	.004233	....	....	
16, 000	64, 000	.038667	.004934	....	....	
16, 500	66, 000	.044500	.005833	....	....	
17, 000	68, 000	.052333	.007833	....	....	
17, 500	70, 000	.061667	.009334	....	....	
18, 000	72, 000	.075500	.013833	....	....	
18, 500	74, 000	.0967	.0212	....	....	
18, 870	75, 480	.1633	.0666	....	....	Tensile strength.

General summary.

Specific gravity		7. 8597
Hardness		12. 96
Tensile strength per square inch of original section	pounds..	75, 480
Elastic limit per square inch of original section	do...	46, 000
Elongation per inch after rupture	inch..	0. 2700
Elongation per inch under strain at elastic limit	do...	.001467
Reduction in diameter at point of rupture	do...	.194
Reduction in area after rupture, per centum of original section		57. 0
Position of rupture		1″.1 from neck
Character of broken surface		silky ; opened cracks in surface of stem
Elongation of inch sections		″.45*, ″.23, ″.13

No. 2135.

Marks, $^{8\,T_{33}}_{B\,T_{3}\,O}$
Diameter, ''.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
9,000	36,000	.001167	.000034	....	....	
9,250	37,000	.001200	.000033	....	....	
9,500	38,000	.001233	.000033	....	....	
9,750	39,000	.001300	.000067	....	....	
10,000	40,000	.001367	.000067	.000033	.000033	
10,250	41,000	.001433	.000066	....	....	Elastic limit.
10,500	42,000	.013833	.012400	....	....	
10,750	43,000	.014833	.001000	....	....	
11,000	44,000	.016033	.001200	....	....	
11,250	45,000	.016900	.000867	....	....	
11,500	46,000	.018167	.001267	....	....	
11,750	47,000	.019533	.001366	....	....	
12,000	48,000	.020900	.001367	....	....	
12,250	49,000	.022167	.001267	....	....	
12,500	50,000	.024000	.001833	....	....	
12,750	51,000	.025100	.001100	....	....	
13,000	52,000	.026700	.001600	....	....	
13,250	53,000	.028167	.001467	....	....	
13,500	54,000	.030233	.002066	....	....	
13,750	55,000	.031867	.001634	....	....	
14,000	56,000	.034000	.002133	....	....	
14,250	57,000	.036000	.002000	....	....	
14,500	58,000	.038333	.002333	....	....	
14,750	59,000	.040400	.002067	....	....	
15,000	60,000	.044500	.004100	....	....	
15,500	62,000	.050667	.006167	....	....	
16,000	64,000	.056667	.006000	....	....	
16,500	66,000	.0667	.010033	....	....	
17,000	68,000	.0800	.0133	....	....	
17,500	70,000	.1000	.0200	....	....	
18,000	72,000	.1200	.0200	....	....	
18,350	73,400	.1833	.0633	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	73,400
Elastic limit per square inch of original section	do...	41,000
Elongation per inch after rupture	inch..	0.2600
Elongation per inch under strain at elastic limit	do...	.001433
Reduction in diameter at point of rupture	do...	.124
Reduction in area after rupture, per centum of original section		39.2
Position of rupture		1''.1 from neck
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		''.37*, ''.24, ''.17

No. 2136.

Marks, $^{8\ T_{39}}_{B\ T_3\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
9,000	36,000	.001167	.000034	....	....	
9,250	37,000	.001200	.000033	....	....	
9,500	38,000	.001233	.000033	....	....	
9,750	39,000	.001300	.000067	....	....	
10,000	40,000	.001367	.000067	.000033	.000033	
10,250	41,000	.001400	.000033	....	....	
10,500	42,000	.001433	.000033	....	....	Elastic limit.
10,750	43,000	.009267	.007834	....	....	
11,000	44,000	.009900	.000633	....	....	
11,250	45,000	.010800	.000900	....	....	
11,500	46,000	.012467	.001667	....	....	
11,750	47,000	.013167	.000700	....	....	
12,000	48,000	.014567	.001400	....	....	
12,250	49,000	.015500	.000933	....	....	
12,500	50,000	.016833	.001333	....	....	
12,750	51,000	.018333	.001500	....	....	
13,000	52,000	.019833	.001500	....	....	
13,250	53,000	.021333	.001500	....	....	
13,500	54,000	.022833	.001500	....	....	
13,750	55,000	.024333	.001500	....	....	
14,000	56,000	.026167	.001834	....	....	
14,250	57,000	.028167	.002000	....	....	
14,500	58,000	.030000	.001833	....	....	
14,750	59,000	.032000	.002000	....	....	
15,000	60,000	.034000	.002000	....	....	
15,500	62,000	.038667	.004667	....	....	
16,000	64,000	.044500	.005833	....	....	
16,500	66,000	.052167	.007667	....	....	
17,000	68,000	.060667	.008500	....	....	
17,500	70,000	.0700	.009333	....	....	
18,000	72,000	.0900	.0200	....	....	
18,500	74,000	.1233	.0333	....	....	
18,680	74,720	.1733	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	74,720
Elastic limit per square inch of original section	do...	42,000
Elongation per inch after rupture	inch..	0.2467
Elongation per inch under strain at elastic limit	do...	.001433
Reduction in diameter at point of rupture	do...	.154
Reduction in area after rupture, per centum of original section		47.2
Position of rupture		¾ inch from neck
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		″.41*, ″.18, ″.15

No. 2137.

Marks, $^{8\,T.}_{M\,T.\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	C.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
9,000	36,000	.001167	.000034	....	....	
9,250	37,000	.001200	.000033	....	....	
9,500	38,000	.001233	.000033	....	....	
9,750	39,000	.001267	.000034	....	....	
10,000	40,000	.001367	.000100	.000033	.000033	
10,250	41,000	.001400	.000033	....	....	
10,500	42,000	.001433	.000033	....	....	
10,750	43,000	.001467	.000034	....	....	
11,000	44,000	.001467	0.	....	....	
11,250	45,000	.001500	.000033	....	....	Elastic limit.
11,500	46,000	.010433	.008933	....	....	
11,750	47,000	.011000	.000567	....	....	
12,000	48,000	.012067	.001067	....	....	
12,250	49,000	.012767	.000700	....	....	
12,500	50,000	.014133	.001366	....	....	
12,750	51,000	.015500	.001367	....	....	
13,000	52,000	.017000	.001500	....	....	
12,250	53,000	.018333	.001333	....	....	
13,500	54,000	.020000	.001667	....	....	
13,750	55,000	.021000	.001000	....	....	
14,000	56,000	.022333	.001333	....	....	
14,250	57,000	.024000	.001667	....	....	
14,500	58,000	.025833	.001833	....	....	
14,750	59,000	.027333	.001500	....	....	
15,000	60,000	.029500	.002167	....	....	
15,500	62,000	.033783	.004233	....	....	
16,000	64,000	.038167	.004434	....	....	
16,500	66,000	.043567	.005400	....	....	
17,000	68,000	.050000	.006433	....	....	
17,500	70,000	.059333	.009333	....	....	
18,000	72,000	.071667	.012334	....	....	
18,500	74,000	.0933	.021633	....	....	
19,000	76,000	.1333	.0400	....	....	
19,040	76,160	.1533	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..................................pounds.. 76,160
Elastic limit per square inch of original section..................................do... 45,000
Elongation per inch after rupture..................................inch.. 0.2333
Elongation per inch under strain at elastic limit..................................do... .001500
Reduction in diameter at point of rupture..................................do... .164
Reduction in area after rupture, per centum of original section.................................. 49.7
Position of rupture..................................1″.1 from neck
Character of broken surface..................................silky; opened cracks in surface of stem
Elongation of inch sections..................................″.37*, ″.20 ″.13

No. 2138.

Marks, $\overset{8\,T_{9}}{M\,T_{3}\,O}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	.000033	.000033	
2,500	10,000	.000367	.000200	.000033	0.	
3,750	15,000	.000567	.000200	.000033	0.	
5,000	20,000	.000733	.000166	.000033	0.	
6,250	25,000	.000900	.000167	.000067	.000034	
7,500	30,000	.001067	.000167	.000067	0.	
8,750	35,000	.001233	.000166	.000067	0.	
9,000	36,000	.001300	.000067	....	....	
9,250	37,000	.001367	.000067	....	....	
9,500	38,000	.001400	.000033	....	....	
9,750	39,000	.001433	.000033	....	....	
10,000	40,000	.001467	.000034	.000067	0.	
10,250	41,000	.001433	.000034	....	....	Elastic limit.
10,500	42,000	.005733	.004300	....	....	
10,750	43,000	.008500	.002767	....	....	
11,000	44,000	.009333	.000833	....	....	
11,250	45,000	.010667	.001334	....	....	
11,500	46,000	.011700	.001033	....	....	
11,750	47,000	.012600	.000900	....	....	
12,000	48,000	.014000	.001400	....	....	
12,250	49,000	.014967	.000967	....	....	
12,500	50,000	.016667	.001700	....	....	
12,750	51,000	.017833	.001166	....	....	
13,000	52,000	.019333	.001500	....	....	
13,250	53,000	.020400	.001067	....	....	
13,500	54,000	.022067	.001667	....	....	
13,750	55,000	.023500	.001433	....	....	
14,000	56,000	.025167	.001667	....	....	
14,250	57,000	.026667	.001500	....	....	
14,500	58,000	.028733	.002066	....	....	
14,750	59,000	.030400	.001667	....	....	
15,000	60,000	.032667	.002267	....	....	
15,500	62,000	.037500	.004833	....	....	
16,000	64,000	.042333	.004833	....	....	
16,500	66,000	.048667	.006334	....	....	
17,000	68,000	.056667	.008000	....	....	
17,500	70,000	.068333	.011666	....	....	
18,000	72,000	.0867	.018367	....	....	
18,500	74,000	.1033	.0166	....	....	
18,870	75,480	.1467	.0434	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	75,480
Elastic limit per square inch of original section	do...	41,000
Elongation per inch after rupture	inch..	0.1667
Elongation per inch under strain at elastic limit	do...	.001433
Reduction in diameter at point of rupture	do...	.074
Reduction in area after rupture, per centum of original section		24.6
Position of rupture		¾ inch from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		".23*, ".15, ".12

No. 2139.

Marks, $\overset{8\ T_9}{M\ T_2\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

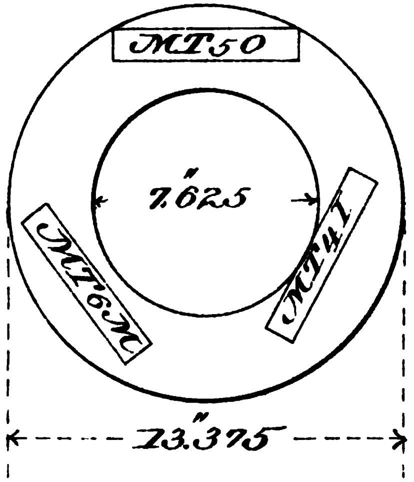
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
9, 000	36, 000	.001133	0.	....	....	
9, 250	37, 000	.001167	.000034	....	....	
9, 500	38, 000	.001200	.000033	....	....	
9, 750	39, 000	.001233	.000033	....	....	
10, 000	40, 000	.001267	.000034	0.	....	
10, 250	41, 000	.001367	.000100	....	....	
10, 500	42, 000	.001400	.000033	....	....	Elastic limit.
10, 750	43, 000	.004000	.002600	....	....	
11, 000	44, 000	.007667	.003667	....	....	
11, 250	45, 000	.008667	.001000	....	....	
11, 500	46, 000	.009867	.001200	....	....	
11, 750	47, 000	.010700	.000833	....	....	
12, 000	48, 000	.011833	.001133	....	....	
12, 250	49, 000	.013000	.001167	....	....	
12, 500	50, 000	.014133	.001133	....	....	
12, 750	51, 000	.015433	.001300	....	....	
13, 000	52, 000	.016667	.001234	....	....	
13, 250	53, 000	.017833	.001166	....	....	
13, 500	54, 000	.019200	.001367	....	....	
13, 750	55, 000	.020400	.001200	....	....	
14, 000	56, 000	.021933	.001533	....	....	
14, 250	57, 000	.023333	.001400	....	....	
14, 500	58, 000	.025183	.001800	....	....	
14, 750	59, 000	.026667	.001534	....	....	
15, 000	60, 000	.028667	.002000	....	....	
15, 500	62, 000	.032100	.003433	....	....	
16, 000	64, 000	.037000	.004900	....	....	
16, 500	66, 000	.042333	.005333	....	....	
17, 000	68, 000	.048667	.006334	....	....	
17, 500	70, 000	.056667	.008000	....	....	
18, 000	72, 000	.0667	.010033	....	....	
18, 500	74, 000	.0867	.0200	....	....	
19, 000	76, 000	.1100	.0233	....	....	
19, 220	76, 880	.1467	.0367	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76, 880
Elastic limit per square inch of original section	do...	42, 000
Elongation per inch after rupture	inch..	0. 1933
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.074
Reduction in area after rupture, per centum of original section		24. 6
Position of rupture		″.22 from neck
Character of broken surface		granular; dull spot at circumference
Fractured		¼ inch from minimum diameter
Elongation of inch sections		″.31*, ″.14, ″.13

Tube No. 39   8" converted Rifle

Additional specimens



H Ex 31 49 2

No. 2484.

Marks, $\overset{8\ T_{38}}{M\ T_4\ I}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000433	.000133	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	....	....	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001167	.000034	....	....	
9,500	38,000	.001200	.000033	....	....	
9,750	39,000	.001233	.000033	....	....	
10,000	40,000	.001300	.000067	....	....	
10,250	41,000	.001367	.000067	....	....	
10,500	42,000	.001400	.000033	....	....	
10,750	43,000	.001433	.000033	....	....	Elastic limit.
11,000	44,000	.001600	.000167	....	....	
11,250	45,000	.004733	.003133	....	....	
11,500	46,000	.009533	.004800	....	....	
11,750	47,000	.010233	.000700	....	....	
12,000	48,000	.011533	.001300	....	....	
12,250	49,000	.012833	.000800	....	....	
12,500	50,000	.013833	.001500	....	....	
13,000	52,000	.016700	.002867	....	....	
13,500	54,000	.019667	.002967	....	....	
14,000	56,000	.022700	.003033	....	....	
14,500	58,000	.025833	.003133	....	....	
15,000	60,000	.029667	.003834	....	....	
15,500	62,000	.033900	.004233	....	....	
16,000	64,000	.039167	.005267	....	....	
16,500	66,000	.045000	.005833	....	....	
17,000	68,000	.051667	.006667	....	....	
17,500	70,000	.060667	.009000	....	....	
18,000	72,000	.0733	.012633	....	....	
18,500	74,000	.0933	.0200	....	....	
19,000	76,000	.1433	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76,000
Elastic limit per square inch of original section	do...	43,000
Elongation per inch after rupture	inch..	0.2433
Elongation per inch under strain at elastic limit	do...	.001433
Reduction in diameter at point of rupture	do...	.184
Reduction in area after rupture, per centum of original section		54.6
Position of rupture		1".15 from neck
Character of broken surface		silky
Elongation of inch sections		".36*, ".24 ".13

No. 2485.

Marks, $\overset{8\ \mathrm{T}_{\infty}}{\mathrm{M\ T_{1}\ O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000433	.000166	0	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000733	.000133	0.	....	
7,500	30,000	.000900	.000167	0.	....	
8,750	35,000	.001033	.000133	....	....	
9,000	36,000	.001067	.000034	....	....	
9,250	37,000	.001100	.000033	....	....	
9,500	38,000	.001133	.000033	....	....	
9,750	39,000	.001133	0.	....	....	
10,000	40,000	.001167	.000034	....	....	
10,250	41,000	.001200	.000033	....	....	
10,500	42,000	.001233	.000033	....	....	
10,750	43,000	.001300	.000067	....	....	
11,000	44,000	.001400	.000100	....	....	Elastic limit.
11,250	45,000	.009367	.007967	....	....	
11,500	46,000	.010000	.000633	....	....	
11,750	47,000	.010733	.000733	....	....	
12,000	48,000	.011900	.001167	....	....	
12,250	49,000	.012833	.000933	....	....	
12,500	50,000	.014500	.001667	....	....	
13,000	52,000	.017000	.002500	....	....	
13,500	54,000	.019667	.002667	....	....	
14,000	56,000	.022667	.003000	....	....	
14,500	58,000	.025333	.002666	....	....	
15,000	60,000	.028833	.003500	....	....	
15,500	62,000	.032333	.003500	....	....	
16,000	64,000	.037167	.004834	....	....	
16,500	66,000	.042000	.004833	....	....	
17,000	68,000	.047833	.005833	....	....	
17,500	70,000	.055000	.007167	....	....	
18,000	72,000	.0667	.0117	....	....	
18,500	74,000	.0767	.0100	....	....	
19,000	76,000	.1033	.0266	....	....	
19,350	77,400	.1433	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	77,400
Elastic limit, per square inch of original section	do...	44,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.184
Reduction in area after rupture, per centum of original section		41.9
Position of rupture		″.75 from neck
Character of broken surface		silky, with slight granulation
Elongation of inch sections		″.33*, ″.15, ″.12

No. 2486.

Marks, $\overset{8\ T_{9}}{M\ T_{6}\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000333	.000200	0.	....	
3, 750	15, 000	.000500	.000167	0.	....	
5, 000	20, 000	.000667	.000167	0.	....	
6, 250	25, 000	.000833	.000166	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
8, 750	35, 000	.001100	.000100	....	....	
9, 000	36, 000	.001167	.000067	....	....	
9, 250	37, 000	.001200	.000033	....	....	
9, 500	38, 000	.001233	.000033	....	....	
9, 750	39, 000	.001267	.000034	....	....	
10, 000	40, 000	.001333	.000066	....	....	
10, 250	41, 000	.001367	.000034	....	....	
10, 500	42, 000	.001433	.000066	....	....	Elastic limit.
10, 750	43, 000	.009500	.008067	....	....	
11, 000	44, 000	.010500	.001000	....	....	
11, 250	45, 000	.011333	.000833	....	....	
11, 500	46, 000	.012500	.001167	....	....	
11, 750	47, 000	.013467	.000967	....	....	
12, 000	48, 000	.014833	.001366	....	....	
12, 250	49, 000	.015800	.000967	....	....	
12, 500	50, 000	.017167	.001367	....	....	
13, 000	52, 000	.020167	.003000	....	....	
13, 500	54, 000	.023167	.003000	....	....	
14, 000	56, 000	.026333	.003166	....	....	
14, 500	58, 000	.029667	.003334	....	....	
15, 000	60, 000	.033833	.004166	....	....	
15, 500	62, 000	.038500	.004667	....	....	
16, 000	64, 000	.043833	.005333	....	....	
16, 500	66, 000	.050000	.006167	....	....	
17, 000	68, 000	.057667	.007667	....	....	
17, 500	70, 000	.0700	.012333	....	....	
18, 000	72, 000	.0833	.0133	....	....	
18, 500	74, 000	.1033	.0200	....	....	
18, 940	75, 760	.1700	.0667	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	75, 760
Elastic limit per square inch of original section ....do...	42, 000
Elongation per inch after rupture ....inch..	0. 2233
Elongation per inch under strain at elastic limit ....do...	.001433
Reduction in diameter at point of rupture....................do...	.094
Reduction in area after rupture, per centum of original section....................	30. 6
Position of rupture	1″.60 from neck
Character of broken surface granular; dull spot at circumference; opened cracks in surface of stem	
Elongation of inch sections....................	″.16″, .32*, ″.19

No. 1129.

Marks, $^{8\ T_{60}}_{B\ T_1\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000300	.000133	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	.000033	.000033	
6,250	25,000	.000800	.000167	.000033	0.	
7,500	30,000	.000967	.000167	.000067	.000034	
8,750	35,000	.001133	.000166	.000100	.000033	
10,000	40,000	.001367	.000234	.000100	0.	Elastic limit.
10,250	41,000	.002333	.000966	....	....	
10,500	42,000	.007167	.004834	....	....	
10,750	43,000	.008000	.000833	....	....	
11,000	44,000	.009200	.001200	....	....	
11,250	45,000	.010233	.001033	.005467	.005367	
11,500	46,000	.011600	.001367	....	....	
11,750	47,000	.012733	.001133	....	....	
12,000	48,000	.013733	.001000	....	....	
12,250	49,000	.014933	.001200	....	....	
12,500	50,000	.016467	.001534	.014567	.009100	
12,750	51,000	.017067	.000600	....	....	
13,000	52,000	.018767	.001700	....	....	
13,250	53,000	.020400	.001633	....	....	
13,500	54,000	.022067	.001667	....	....	
13,750	55,000	.023833	.001766	....	....	
14,000	56,000	.026000	.002167	....	....	
14,250	57,000	.028000	.002000	....	....	
14,500	58,000	.030500	.002500	....	....	
14,750	59,000	.032167	.001667	....	....	
15,000	60,000	.034600	.002433	....	....	
15,500	62,000	.040000	.005400	....	....	
16,000	64,000	.045667	.005667	....	....	
16,500	66,000	.053333	.007666	....	....	
17,000	68,000	.063333	.010000	....	....	
17,500	70,000	.079333	.016000	....	....	
18,000	72,000	.1233	.043967	....	....	
18,180	72,720	.1533 .1967	.0300 .0434	....	....	Tensile strength.

General summary.

Specific gravity	7.8556
Hardness	11.92
Tensile strength per square inch of original section ....pounds..	72,720
Elastic limit per square inch of original section ....do...	40,000
Elongation per inch after rupture ....inch..	0.2667
Elongation per inch under strain at elastic limit ....do...	.001367
Reduction in diameter at point of rupture ....do...	.154
Reduction in area after rupture, per centum of original section	47.2
Position of rupture	¾ inch from neck
Character of broken surface	silky
Elongation of inch sections	″.44*, ″.20, ″.16

No. 1130.

Marks, $\begin{smallmatrix}8\,T_{40}\\B\,T_{2}O\end{smallmatrix}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000333	.000200	0.	....	
3, 750	15, 000	.000533	.000200	0.	....	
5, 000	20, 000	.000700	.000167	.000033	.000033	
6, 250	25, 000	.000867	.000167	.000038	0.	
7, 500	30, 000	.001033	.000166	.000067	.000034	
8, 750	35, 000	.001167	.000134	.000067	0.	
9, 500	38, 000	.001300	.000133	....	....	
9, 750	39, 000	.001367	.000067	....	....	
10, 000	40, 000	.001433	.000066	.000167	.000100	Elastic limit.
10, 250	41, 000	.005767	.004334	....	....	
10, 500	42, 000	.008033	.002266	....	....	
10, 750	43, 000	.008500	.000467	....	....	
11, 000	44, 000	.009433	.000933	....	....	
11, 250	45, 000	.010700	.001267	.009033	.008866	
11, 500	46, 000	.012033	.001333	....	....	
11, 750	47, 000	.012533	.000500	....	....	
12, 000	48, 000	.014667	.002134	....	....	
12, 250	49, 000	.015600	.000983	....	....	
12, 500	50, 000	.017400	.001800	.015333	.006300	
12, 750	51, 000	.017700	.000300	....	....	
13, 000	52, 000	.018400	.000700	....	....	
13, 250	53, 000	.020167	.001767	....	....	
13, 500	54, 000	.022167	.002000	....	....	
13, 750	55, 000	.023600	.001433	....	....	
14, 000	56, 000	.025500	.001900	....	....	
14, 250	57, 000	.027167	.001667	....	....	
14, 500	58, 000	.029167	.002000	....	....	
14, 750	59, 000	.031100	.001933	....	....	
15, 000	60, 000	.033433	.002333	....	....	
15, 500	62, 000	.037667	.004234	....	....	
16, 000	64, 000	.043333	.005666	....	....	
16, 500	66, 000	.050000	.006667	....	....	
17, 000	68, 000	.058500	.008500	....	....	
17, 500	70, 000	.068933	.010433	....	....	
18, 000	72, 000	.084000	.015067	....	....	
18, 500	74, 000	.1133	.0293	....	....	
18, 740	74, 960	.1667	.0534	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..................................pounds.. 74, 960
Elastic limit per square inch of original section..................................do... 40, 000
Elongation per inch after rupture..................................inch.. 0. 2533
Elongation per inch under strain at elastic limit..................................do... .001433
Reduction in diameter at point of rupture..................................do... .144
Reduction in area after rupture, per centum of original section.................................. 44. 6
Position of rupture..................................″.1 from middle of stem
Character of broken surface..................................silky
Elongation of inch sections..................................″.21, ″.40*, ″.15

No. 1131.

Marks, $\overset{8\ T_{40}}{B\ T_3\ M}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000200	.000200	.000033	.000033	
2, 500	10, 000	.000433	.000233	.000033	0.	
3, 750	15, 000	.000600	.000167	.000067	.000034	
5, 000	20, 000	.000733	.000183	.000067	0.	
6, 250	25, 000	.000900	.000167	.000067	0.	
7, 500	30, 000	.001067	.000167	.000100	.000033	
8, 750	35, 000	.001233	.000166	.000133	.000033	Elastic limit.
9, 000	36, 000	.001367	.000134	....	....	
9, 250	37, 000	.001933	.000566	....	....	
9, 500	38, 000	.008267	.006334	....	....	
9, 750	39, 000	.009433	.001166	....	....	
10, 000	40, 000	.010400	.000967	.008900	.008767	
10, 250	41, 000	.011267	.000867	....	....	
10, 500	42, 000	.012267	.001000	....	....	
10, 750	43, 000	.013100	.001233	....	....	
11, 000	44, 000	.015133	.001733	....	....	
11, 250	45, 000	.016500	.001367	....	....	
11, 500	46, 000	.017333	.000833	....	....	
11, 750	47, 000	.018967	.001634	....	....	
12, 000	48, 000	.020000	.001033	....	....	
12, 250	49, 000	.021667	.001667	....	....	
12, 500	50, 000	.023400	.001733	....	....	
12, 750	51, 000	.025333	.001933	....	....	
13, 000	52, 000	.027000	.001667	....	....	
13, 250	53, 000	.028667	.001667	....	....	
13, 500	54, 000	.030667	.002000	....	....	
13, 750	55, 000	.032500	.001833	....	....	
14, 000	56, 000	.035067	.002567	....	....	
14, 250	57, 000	.037067	.002000	....	....	
14, 500	58, 000	.039433	.002366	....	....	
14, 750	59, 000	.042167	.002734	....	....	
15, 000	60, 000	.045833	.003666	....	....	
15, 500	62, 000	.052333	.006500	....	....	
16, 000	64, 000	.060667	.008334	....	....	
16, 500	66, 000	.071333	.010666	....	....	
17, 000	68, 000	.0933	.021967	....	....	
17, 500	70, 000	.1133	.0200	....	....	
17, 920	71, 680	.1900	.0767	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	71, 680
Elastic limit per square inch of original section	do...	35, 000
Elongation per inch after rupture	inch..	0. 2333
Elongation per inch under strain at elastic limit	do ..	.001233
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		".20, ".34*, ".16

No. 1132.

Marks, $\overset{8\ T_{40}}{\mathrm{M\ T}}$, I
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	....	....	
2,500	10,000	.000367	.000200	....	....	
3,750	15,000	.000533	.000166	....	....	
5,000	20,000	.000700	.000167	....	....	
6,250	25,000	.000867	.000167	....	....	
7,500	30,000	.001033	.000166	....	....	
8,500	34,000	.001067	.000034	....	....	Elastic limit.
8,750	35,000	.001300	.000233	.000200	.000200	
9,000	36,000	.002900	.001600	....	....	
9,250	37,000	.005333	.002433	....	....	
9,500	38,000	.007667	.002334	....	....	
9,750	39,000	.008667	.001000	....	....	
10,000	40,000	.010067	.001400	.008500	.008300	
10,250	41,000	.010400	.000333	....	....	
10,500	42,000	.011600	.001200	....	....	
10,750	43,000	.012733	.001133	....	....	
11,000	44,000	.013933	.001200	....	....	
11,250	45,000	.015267	.001334	....	....	
11,500	46,000	.016733	.001466	....	....	
11,750	47,000	.018033	.001300	....	....	
12,000	48,000	.019833	.001800	....	....	
12,250	49,000	.020400	.001067	....	....	
12,500	50,000	.022067	.001667	....	....	
12,750	51,000	.023733	.001666	....	....	
13,000	52,000	.025333	.001600	....	....	
13,250	53,000	027400	.002067	....	....	
13,500	54,000	.029000	.001600	....	....	
13,750	55,000	.031067	.002067	....	....	
14,000	56,000	.033333	.002266	....	....	
14,250	57,000	.035933	.002600	....	....	
14,500	58,000	.037833	.001900	....	....	
14,750	59,000	.040500	.002667	....	....	
15,000	60,000	.043333	.002833	....	....	
15,500	62,000	.049167	.005834	....	....	
16,000	64,000	.056333	.007166	....	....	
16,500	66,000	.066000	.009667	....	....	
17,000	68,000	.080000	.014000	....	....	
17,500	70,000	.1000	.0200	....	....	
18,000	72,000	.1333	.0333	....	....	
18,200	72,800	.1933	.0600	....	....	Tensile strength.

General summary.

Specific gravity		7.8528
Hardness		11.59
Tensile strength per square inch of original section	pounds..	72,800
Elastic limit per square inch of original section	do...	34,000
Elongation per inch after rupture	inch..	0.2400
Elongation per inch under strain at elastic limit	do...	.001067
Reduction in diameter at point of rupture	do...	.134
Reduction in area after rupture, per centum of original section		41.9
Position of rupture		⅝ inch from neck
Character of broken surface		silky
Elongation of inch sections		".35*, ".20, ".17

No. 1133.

Marks, $\overset{8}{\text{M}}\,\overset{\text{T}_{40}}{\text{T}_{3}}\,\text{O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000200	.000200	.000033	.000033	
2,500	10,000	.000367	.000167	.000033	0.	
3,750	15,000	.000533	.000166	.000067	.000034	
5,000	20,000	.000700	.000167	.000067	0.	
6,250	25,000	.000867	.000167	.000067	0.	
7,500	30,000	.001033	.000166	.000100	.000033	
8,750	35,000	.001200	.000167	.000100	0.	
9,000	36,000	.001233	.000033	....	....	Elastic limit.
9,250	37,000	.001400	.000167	....	....	
9,500	38,000	.007067	.005667	....	....	
9,750	39,000	.009333	.002266	....	....	
10,000	40,000	.010400	.001067	.008900	.008800	
10,250	41,000	.010900	.000500	....	....	
10,500	42,000	.011500	.000600	....	....	
10,750	43,000	.012367	.000867	....	....	
11,000	44,000	.013567	.001200	....	....	
11,250	45,000	.014833	.001266	....	....	
11,500	46,000	.016333	.001500	....	....	
11,750	47,000	.017333	.001000	....	....	
12,000	48,000	.018333	.001000	....	....	
12,250	49,000	.019867	.001534	....	....	
12,500	50,000	.021167	.001300	....	....	
12,750	51,000	.022000	.000833	....	....	
13,000	52,000	.023267	.001267	....	....	
13,250	53,000	.024667	.001400	....	....	
13,500	54,000	.026467	.001800	....	....	
13,750	55,000	.028133	.001666	....	....	
14,000	56,000	.030100	.001967	....	....	
14,250	57,000	.031700	.001600	....	....	
14,500	58,000	.033333	.001633	....	....	
14,750	59,000	.035100	.001767	....	....	
15,000	60,000	.037400	.002300	....	....	
15,500	62,000	.042400	.005000	....	....	
16,000	64,000	.047333	.004933	....	....	
16,500	66,000	.053400	.006067	....	....	
17,000	68,000	.060167	.006767	....	....	
17,500	70,000	.071333	.011166	....	....	
18,000	72,000	.0867	.015367	....	....	
18,500	74,000	.1033	.0166	....	....	
19,000	76,000	.1333	.0300	....	....	
19,280	77,120	.1967	.0634	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	77,123
Elastic limit per square inch of original section............do...	36,000
Elongation per inch after rupture ....inch..	0.2360
Elongation per inch under strain at elastic limit ....do...	.001237
Reduction in diameter at point of rupture............do...	.074
Reduction in area after rupture, per centum of original section............	24.6

Position of rupture ....″.40 from middle of stem

Character of broken surface, granular; flaky spot at circumference; cracks developed along surface of stem.

Elongation of inch sections ....″.21, ″.31*, ″.19

No. 1134.

Marks, $\overset{8}{\text{M}}\,\overset{\text{T}}{\text{T}},\text{M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	.000033	.000033	
8, 750	35, 000	.001133	.000166	.000033	0.	Elastic limit.
9, 000	36, 000	.002733	.001600	....	....	
9, 250	37, 000	.005833	.003100	....	....	
9, 500	38, 000	.008400	.002567	....	....	
9, 750	39, 000	.009567	.001167	....	....	
10, 000	40, 000	.010667	.001100	.009233	.009200	
10, 250	41, 000	.011000	.000333	....	....	
10, 500	42, 000	.011600	.000600	....	....	
10, 750	43, 000	.012467	.000867	....	....	
11, 000	44, 000	.013767	.001300	....	....	
11, 250	45, 000	.015167	.001400	....	....	
11, 500	46, 000	.016567	.001400	....	....	
11, 750	47, 000	.017367	.000800	....	....	
12, 000	48, 000	.018700	.001333	....	....	
12, 250	49, 000	.019800	.001100	....	....	
12, 500	50, 000	.021400	.001600	....	....	
12, 750	51, 000	.022667	.001267	....	....	
13, 000	52, 000	.024100	.001433	....	....	
13, 250	53, 000	.025433	.001333	....	....	
13, 500	54, 000	.027167	.001734	....	....	
13, 750	55, 000	.028833	.001666	....	....	
14, 000	56, 000	.030800	.001967	....	....	
14, 250	57, 000	.032467	.001667	....	....	
14, 500	58, 000	.034533	.002066	....	....	
14, 750	59, 000	.036167	.001634	....	....	
15, 000	60, 000	.038167	.002000	....	....	
15, 500	62, 000	.042667	.004500	....	....	
16, 000	64, 000	.045000	.002333	....	....	
16, 500	66, 000	.054833	.009833	....	....	
17, 000	68, 000	.062333	.007500	....	....	
17, 500	70, 000	.072667	.010334	....	....	
18, 000	72, 000	.085667	.013000	....	....	
18, 500	74, 000	.1167	.031033	....	....	
19, 000	76, 000	.1633	.0466	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section........................pounds.. 76, 000
Elastic limit per square inch of original section........................do... 35, 000
Elongation per inch after rupture........................inch.. .2367
Elongation per inch under strain at elastic limit........................do.. .001133
Reduction in diameter at point o. rupture........................do... .114
Reduction in area after rupture, per centum of original section........................ 36. 4
Position of rupture........................¾ inch from neck
Character of broken surface........................silky
Elongation of inch sections........................″.38, ″.21, ″.12

No. 2098.

Marks, $\overset{8\ T_{41}}{B\ T_1\ I}$

Diameter, ".564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000333	.000200	0.	....	
3,750	15,000	.000467	.000134	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
10,000	40,000	.001367	.000234	.000033	.000033	Elastic limit.
10,250	41,000	.001567	.000200	....	....	
10,500	42,000	.002500	.000933	....	....	
10,750	43,000	.005167	.002667	....	....	
11,000	44,000	.006167	.001000	....	....	
11,250	45,000	.007500	.001333	....	....	
11,500	46,000	.008667	.001167	....	....	
11,750	47,000	.010233	.001556	....	....	
12,000	48,000	.011500	.001267	....	....	
12,250	49,000	.012667	.001167	....	....	
12,500	50,000	.013733	.001066	....	....	
12,750	51,000	.014667	.000934	....	....	
13,000	52,000	.015767	.001100	....	....	
13,250	53,000	.017167	.001400	....	....	
13,500	54,000	.018567	.001400	....	....	
13,750	55,000	.019867	.001300	....	....	
14,000	56,000	.021667	.001800	....	....	
14,250	57,000	.023333	.001666	....	....	
14,500	58,000	.024967	.001634	....	....	
14,750	59,000	.026667	.001700	....	....	
15,000	60,000	.028667	.002000	....	....	
15,500	62,000	.033167	.004500	....	....	
16,000	64,000	.036900	.003733	....	....	
16,500	66,000	.042000	.005100	....	....	
17,000	68,000	.048667	.006667	....	....	
17,500	70,000	.056167	.007500	....	....	
18,000	72,000	.068333	.012166	....	....	
18,500	74,000	.0900	.021667	....	....	
19,000	76,000	.1300	.0400	....	....	
19,190	76,760	.1800	.0500	....	....	Tensile strength.

General summary.

Specific gravity	7.8576
Hardness	13.46
Tensile strength per square inch of original section.....pounds..	76,760
Elastic limit per square inch of original section.....do...	40,000
Elongation per inch after rupture.....inch..	0.2967
Elongation per inch under strain at elastic limit.....do...	.001367
Reduction in diameter at point of rupture.....do...	.204
Reduction in area after rupture, per centum of original section	59.3
Position of rupture	".60 from middle of stem
Character of broken surface	silky
Elongation of inch sections	".35*, ".37*, ".17

No. 2099.

Marks, $\frac{8\,T_{41}}{B\,T_{1}O}$
Diameter, ''.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.		
2, 500	10, 000	.000233	.000133	0.		
3, 750	15, 000	.000400	.000167	0.		
5, 000	20, 000	.000600	.000200	0.		
6, 250	25, 000	.000767	.000167	0.		
7, 500	30, 000	.000900	.000133	0.		
8, 750	35, 000	.001067	.000167	0.		
10, 000	40, 000	.001233	.000166	0.		
10, 250	41, 000	.001267	.000034			
10, 500	42, 000	.001300	.000033			
10, 750	43, 000	.001367	.000067			
11, 000	44, 000	.001433	.000066			Elastic limit.
11, 250	45, 000	.001600	.000167			
11, 500	46, 000	.003567	.001967			
11, 750	47, 000	.004133	.000566			
12, 000	48, 000	.005300	.001167			
12, 250	49, 000	.006333	.001033			
12, 500	50, 000	.007700	.001367			
12, 750	51, 000	.008667	.000967			
13, 000	52, 000	.009767	.001100			
13, 250	53, 000	.010633	.000866			
13, 500	54, 000	.011767	.001134			
13, 750	55, 000	.013033	.001266			
14, 000	56, 000	.014200	.001167			
14, 250	57, 000	.015100	.000900			
14, 500	58, 000	.017000	.001900			
14, 750	59, 000	.018333	.001333			
15, 000	60, 000	.019667	.001334			
15, 500	62, 000	.022333	.002666			
16, 000	64, 000	.025133	.002800			
16, 500	66, 000	.029000	.003867			
17, 000	68, 000	.033000	.004000			
17, 500	70, 000	.037067	.004067			
18, 000	72, 000	.041500	.004433			
18, 500	74, 000	.047333	.005833			
19, 000	76, 000	.055167	.007834			
19, 500	78, 000	.064000	.008833			
20, 000	80, 000	.079000	.015000			
20, 500	82, 000	.1067	.0277			
20, 600	82, 400	.1500	.0433			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	82, 400
Elastic limit per square inch of original section	do...	44, 000
Elongation per inch after rupture	inch..	0. 1667
Elongation per inch under strain at elastic limit	do...	.001433
Reduction in diameter at point of rupture	do...	.074
Reduction in area after rupture, per centum of original section		24. 6
Position of rupture		⅜ inch from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		''.22*, ''.16, ''.12

No. 2100.

Marks, $\overset{8\ T_{41}}{B\ T_{2}\ M}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000200	.000100	0.	....	
3,750	15,000	.000367	.000167	0.	....	
5,000	20,000	.000500	.000133	0.	....	
6,250	25,000	.000667	.000167	0.	....	
7,500	30,000	.000833	.000166	0.	....	
8,750	35,000	.001033	.000200	0.	....	
10,000	40,000	.001300	.000267	.000100	.000100	
10,250	41,000	.001367	.000067	....	....	Elastic limit.
10,500	42,000	.002167	.000800	....	....	
10,750	43,000	.003267	.001100	....	....	
11,000	44,000	.004767	.001500	....	....	
11,250	45,000	.006000	.001233	....	....	
11,500	46,000	.007333	.001333	....	....	
11,750	47,000	.008367	.001034	....	....	
12,000	48,000	.009533	.001166	....	....	
12,250	49,000	.010400	.000867	....	....	
12,500	50,000	.011433	.001033	....	....	
12,750	51,000	.012500	.001067	....	....	
13,000	52,000	.013567	.001067	....	....	
13,250	53,000	.014700	.001133	....	....	
13,500	54,000	.015933	.001233	....	....	
13,750	55,000	.017267	.001334	....	....	
14,000	56,000	.018467	.001200	....	....	
14,250	57,000	.019500	.001033	....	....	
14,500	58,000	.021167	.001667	....	....	
14,750	59,000	.022333	.001166	....	....	
15,000	60,000	.024267	.001934	....	....	
15,500	62,000	.027833	.003566	....	....	
16,000	64,000	.031667	.003834	....	....	
16,500	66,000	.036667	.005000	....	....	
17,000	68,000	.041167	.004500	....	....	
17,500	70,000	.046833	.005666	....	....	
18,000	72,000	.054000	.007167	....	....	
18,500	74,000	.063000	.009000	....	....	
19,000	76,000	.0767	.0147	....	....	
19,500	78,000	.1000	.0233	....	....	
19,910	79,640	.1633	.0633	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	79,640
Elastic limit per square inch of original section	do	41,000
Elongation per inch after rupture	inch	0.2433
Elongation per inch under strain at elastic limit	do	.001367
Reduction in diameter at point of rupture	do	.154
Reduction in area after rupture, per centum of original section		47.2
Position of rupture		¼ inch from middle of stem
Character of broken surface		silky, with traces of granulation
Elongation of inch sections		".24, ".36*, ".13

No. 2101.

Marks, $^{8\,T\,41}_{M\,T,\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000500	.000200	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000800	.000133	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
10,000	40,000	.001300	.000167	0.	....	
10,250	41,000	.001367	.000067	....	....	
10,500	42,000	.001400	.000033	....	....	
10,750	43,000	.001433	.000033	....	....	
11,000	44,000	.001467	.000034	....	....	
11,250	45,000	.001500	.000033	....	....	
11,500	46,000	.001600	.000100	....	....	
11,750	47,000	.001633	.000033	....	....	
12,000	48,000	.001700	.000067	....	....	Elastic limit.
12,250	49,000	.001800	.000100	....	....	
12,500	50,000	.001967	.000167	....	....	
12,750	51,000	.002733	.000766	....	....	
13,000	52,000	.004833	.002100	....	....	
13,250	53,000	.006100	.001267	....	....	
13,500	54,000	.007133	.001033	....	....	
13,750	55,000	.008033	.000900	....	....	
14,000	56,000	.009333	.001300	....	....	
14,250	57,000	.010400	.001067	....	....	
14,500	58,000	.011500	.001100	....	....	
14,750	59,000	.012500	.001000	....	....	
15,000	60,000	.013667	.001167	....	....	
15,500	62,000	.015833	.002166	....	....	
16,000	64,000	.018267	.002434	....	....	
16,500	66,000	.020833	.002566	....	....	
17,000	68,000	.023500	.002667	....	....	
17,500	70,000	.026667	.003167	....	....	
18,000	72,000	.029867	.003200	....	....	
18,500	74,000	.033333	.003466	....	....	
19,000	76,000	.037500	.004167	....	....	
19,500	78,000	.042667	.005167	....	....	
20,000	80,000	.048000	.005333	....	....	
20,500	82,000	.057067	.009067	....	....	
21,000	84,000	.065667	.008600	....	....	
21,500	86,000	.0867	.021033	....	....	
21,910	87,640	.1267	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	87,640
Elastic limit per square inch of original section	do	48,000
Elongation per inch after rupture	inch	0.1333
Elongation per inch under strain at elastic limit	do	.001700
Reduction in diameter at point of rupture	do	.144
Reduction in area after rupture, per centum of original section		44.6
Position of rupture		″.55 from neck
Character of broken surface		granular small dull spot at circumference
Elongation of inch sections		″.12, ″.16*, ″.12

No. 2102.

Marks, $\genfrac{}{}{0pt}{}{8\ T_{41}}{M\ T_{3}\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000467	.000134	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
10, 000	40, 000	.001300	.000167	0.	....	
10, 250	41, 000	.001367	.000067	....	....	
10, 500	42, 000	.001433	.000066	....	....	
10, 750	43, 000	.001467	.000034	....	....	
11, 000	44, 000	.001500	.000033	....	....	
11, 250	45, 000	.001533	.000033	....	....	
11, 500	46, 000	.001567	.000034	....	....	
11, 750	47, 000	.001600	.000033	....	....	
12, 000	48, 000	.001633	.000033	....	....	
12, 250	49, 000	.001700	.000067	....	....	
12, 500	50, 000	.001733	.000033	....	....	Elastic limit.
12, 750	51, 000	.001933	.000200	....	....	
13, 000	52, 000	.002167	.000234	....	....	
13, 250	53, 000	.003367	.001200	....	....	
13, 500	54, 000	.005000	.001633	....	....	
13, 750	55, 000	.006367	.001367	....	....	
14, 000	56, 000	.007833	.001466	....	....	
14, 250	57, 000	.009167	.001334	....	....	
14, 500	58, 000	.010000	.000833	....	....	
14, 750	59, 000	.010833	.000833	....	....	
15, 000	60, 000	.011833	.001000	....	....	
15, 500	62, 000	.013833	.002000	....	....	
16, 000	64, 000	.016667	.002834	....	....	
16, 500	66, 000	.019333	.002666	....	....	
17, 000	68, 000	.021833	.002500	....	....	
17, 500	70, 000	.024833	.003000	....	....	
18, 000	72, 000	.027867	.003034	....	....	
18, 500	74, 000	.031333	.003466	....	....	
19, 000	76, 000	.035200	.003867	....	....	
19, 500	78, 000	.039500	.004300	....	....	
20, 000	80, 000	.044833	.005333	....	....	
20, 500	82, 000	.052500	.007667	....	....	
21, 000	84, 000	.061000	.0085	....	....	
21, 500	86, 000	.0733	.0123	....	....	
21, 990	87, 960	.1267	.0534	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	87, 960
Elastic limit per square inch of original section ....do...	50, 000
Elongation per inch after rupture..........inch..	0. 1933
Elongation per inch under strain at elastic limit ....do...	.001733
Reduction in diameter at point of rupture..........do...	.124
Reduction in area after rupture, per centum of original section..........	39. 2
Position of rupture..........	″.30 from middle
Character of broken surface	granular; dull spot at circumference
Elongation of inch sections	″.17, ″.31*, ″.16

No. 2103.

Marks, $\mathrm{M}^{8}\,\mathrm{T}^{\mathrm{Tu}},\,\mathrm{M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000183	.000183	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.001033	.000233	.000033	.000033	
8, 750	35, 000	.001233	.000200	.000067	.000034	
10, 000	40, 000	.001367	.000134	.000067	0.	
10, 250	41, 000	.001433	.000066	....	....	
10, 500	42, 000	.001467	.000034	....	....	
10, 750	43, 000	.001500	.000033	....	....	
11, 000	44, 000	.001500	0.	....	....	
11, 250	45, 000	.001533	.000033	....	....	
11, 500	46, 000	.001567	.000034	....	....	
11, 750	47, 000	.001600	.000033	....	....	Elastic limit.
12, 000	48, 000	.001700	.000100	....	....	
12, 250	49, 000	.001967	.000267	....	....	
12, 500	50, 000	.002700	.000733	....	....	
12, 750	51, 000	.003733	.001033	....	....	
13, 000	52, 000	.004833	.001100	....	....	
13, 250	53, 000	.006033	.001200	....	....	
13, 500	54, 000	.007067	.001034	....	....	
13, 750	55, 000	.008300	.001233	....	....	
14, 000	56, 000	.009367	.001067	....	....	
14, 250	57, 000	.010167	.000800	....	....	
14, 500	58, 000	.011500	.001333	....	....	
14, 750	59, 000	.012133	.000631	....	....	
15, 000	60, 000	.013167	.001024	....	....	
15, 500	62, 000	.015067	.001900	....	....	
16, 000	64, 000	.017500	.001433	....	....	
16, 500	66, 000	.019833	.002333	....	....	
17, 000	68, 000	.023000	.003167	....	....	
17, 500	70, 000	.026167	.003167	....	....	
18, 000	72, 000	.029000	.002833	....	....	
18, 500	74, 000	.032333	.003333	....	....	
19, 000	76, 000	.035667	.003334	....	....	
19, 500	78, 000	.040333	.004666	....	....	
20, 000	80, 000	.045000	.004667	....	....	
20, 500	82, 000	.052000	.007000	....	....	
21, 000	84, 000	.060000	.008000	....	....	
21, 500	86, 000	.071667	.011667	....	....	
22, 000	88, 000	.0967	.025033	....	....	
22, 080	88, 320	.1167	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 88, 320
Elastic limit per square inch of original section ....do... 47, 000
Elongation per inch after rupture........................inch.. 0. 1733
Elongation per inch under strain at elastic limit........................do... .001600
Reduction in diameter at point of rupture........................do... .124
Reduction in area after rupture, per centum of original section........................ 39. 2
Position of rupture ....″.60 from neck
Character of broken surface........................granular at circumference; dull center
Elongation of inch sections ....″.33*, ″.10, ″.09

[Additional specimens.]

No. 2478.

Marks, $^{8\,T_{41}}_{B\,T_4\,I}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000200	.000200	0.	....	
2,500	10,000	.000400	.000200	0.	....	
3,750	15,000	.000600	.000200	0.	....	
5,000	20,000	.000833	.000233	0.	....	
6,250	25,000	.000967	.000134	0.	....	
7,500	30,000	.001100	.000133	0.	....	
8,750	35,000	.001233	.000133	....	....	
9,000	36,000	.001300	.000067	....	....	
9,250	37,000	.001333	.000033	....	....	
9,500	38,000	.001367	.000034	....	....	
9,750	39,000	.001400	.000033	....	....	Elastic limit.
10,000	40,000	.001500	.000100	....	....	
10,250	41,000	.001800	.000300	....	....	
10,500	42,000	.005733	.003933	....	....	
10,750	43,000	.007667	.001934	....	....	
11,000	44,000	.008667	.001000	....	....	
11,250	45,000	.009767	.001100	....	....	
11,500	46,000	.011067	.001300	....	....	
11,750	47,000	.012033	.000966	....	....	
12,000	48,000	.013500	.001467	....	....	
12,250	49,000	.014733	.001233	....	....	
12,500	50,000	.016167	.001434	....	....	
13,000	52,000	.019667	.003500	....	....	
13,500	54,000	.022667	.003000	....	....	
14,000	56,000	.026033	.003366	....	....	
14,500	58,000	.029700	.003667	....	....	
15,000	60,000	.034000	.004300	....	....	
15,500	62,000	.038500	.004500	....	....	
16,000	64,000	.043733	.005233	....	....	
16,500	66,000	.050667	.006934	....	....	
17,000	68,000	.059000	.008333	....	....	
17,500	70,000	.0700	.0110	....	....	
18,000	72,000	.0867	.0167	....	....	
18,500	74,000	.1267	.0400	....	....	
18,650	74,600	.1667	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section.........pounds..	74,600
Elastic limit per square inch of original section.........do...	39,000
Elongation per inch after rupture.........inch..	0.2700
Elongation per inch under strain at elastic limit.........do...	.001400
Reduction in diameter at point of rupture.........do...	.191
Reduction in area after rupture, per centum of original section.........	57.0
Position of rupture.........	1".28 from neck
Character of broken surface.........	silky
Elongation of inch sections.........	".14, ".27, ".40

No. 2479.

Marks, $^{8\,T_{41}}_{B\,T_{5}\,0}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000567	.000134	0.	....	
6,250	25,000	.000700	.000133	0.	....	
7,500	30,000	.000833	.000133	0.	....	
7,750	31,000	.000867	.000034	....	....	
8,000	32,000	.000900	.000033	....	....	
8,250	33,000	.000967	.000067	....	....	
8,500	34,000	.001000	.000033	....	....	
8,750	35,000	.001033	.000033	....	....	
9,000	36,000	.001067	.000034	....	....	
9,250	37,000	.001067	0.	....	....	
9,500	38,000	.001100	.000033	....	....	
9,750	39,000	.001133	.000033	....	....	
10,000	40,000	.001200	.000067	....	....	
10,250	41,000	.001233	.000033	....	....	
10,500	42,000	.001300	.000067	....	....	
10,750	43,000	.001400	.000100	....	....	Elastic limit.
11,000	44,000	.003333	.001933	....	....	
11,250	45,000	.005000	.001667	....	....	
11,500	46,000	.006333	.001333	....	....	
11,750	47,000	.007133	.000800	....	....	
12,000	48,000	.008167	.001034	....	....	
12,250	49,000	.009000	.000833	....	....	
12,500	50,000	.010333	.001333	....	....	
13,000	52,000	.013233	.002900	....	....	
13,500	54,000	.016000	.002767	....	....	
14,000	56,000	.018567	.002567	....	....	
14,500	58,000	.021367	.002800	....	....	
15,000	60,000	.024667	.003300	....	....	
15,500	62,000	.028333	.003666	....	....	
16,000	64,000	.032000	.003667	....	....	
16,500	66,000	.036667	.004667	....	....	
17,000	68,000	.041367	.004700	....	....	
17,500	70,000	.048500	.007133	....	....	
18,000	72,000	.055667	.007167	....	....	
18,500	74,000	.0667	.011033	....	....	
19,000	76,000	.0767	.0100	....	....	
19,500	78,000	.1200	.0433	....	....	
19,560	78,240	.1400	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	78,240
Elastic limit per square inch of original section..........do...	43,000
Elongation per inch after rupture..........inch..	0.2433
Elongation per inch under strain at elastic limit..........do...	.001400
Reduction in diameter at point of rupture..........do...	.185
Reduction in area after rupture, per centum of original section..........	54.6
Position of rupture..........	1″.4 from neck
Character of broken surface..........	silky
Elongation of inch sections..........	″.13, ″.37*, ″.23

No. 2480.

Marks, $^{8\ T_{41}}_{B\ T_{6}\ M}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000667	.000200	0.	....	
6,250	25,000	.000800	.000133	0.	....	
7,500	30,000	.000933	.000133	0.	....	
7,750	31,000	.000967	.000034	....	....	
8,000	32,000	.001000	.000033	....	....	
8,250	33,000	.001067	.000067	....	....	
8,500	34,000	.001100	.000033	....	....	
8,750	35,000	.001133	.000033	....	....	
9,000	36,000	.001167	.000034	....	....	
9,250	37,000	.001200	.000033	....	....	
9,500	38,000	.001233	.000033	....	....	
9,750	39,000	.001267	.000034	....	....	
10,000	40,000	.001333	.000066	....	....	Elastic limit.
10,250	41,000	.001633	.000300	....	....	
10,500	42,000	.004967	.003334	....	....	
10,750	43,000	.006667	.001700	....	....	
11,000	44,000	.007833	.001166	....	....	
11,250	45,000	.009033	.001200	....	....	
11,500	46,000	.010167	.001134	....	....	
11,750	47,000	.011433	.001266	....	....	
12,000	48,000	.012500	.001067	....	....	
12,250	49,000	.013333	.000833	....	....	
12,500	50,000	.015100	.001767	....	....	
13,000	52,000	.018533	.003433	....	....	
13,500	54,000	.021233	.002700	....	....	
14,000	56,000	.024333	.003100	....	....	
14,500	58,000	.028333	.004000	....	....	
15,000	60,000	.031833	.003500	....	....	
15,500	62,000	.036667	.004834	....	....	
16,000	64,000	.041333	.004666	....	....	
16,500	66,000	.048167	.006834	....	....	
17,000	68,000	.0567	.008533	....	....	
17,500	70,000	.0667	.0100	....	....	
18,000	72,000	.0767	.0100	....	....	
18,500	74,000	.0967	.0200	....	....	
18,850	75,400	.1567	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	75,400
Elastic limit per square inch of original section..........do...	40,000
Elongation per inch after rupture ....inch..	0.2800
Elongation per inch under strain at elastic limit..........do...	.001333
Reduction in diameter at point of rupture ....do...	.193
Reduction in area after rupture, per centum of original section	57.0
Position of rupture..........	1″.10 from neck
Character of broken surface..........	silky
Elongation of inch sections..........	″.40*, ″.24, ″.14

No. 2481.

Marks, $\overset{8\ T_{41}}{M\ T_4\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000300	.000183	0.	....	
3,750	15,000	.000500	.000200	0.	....	
5,000	20,000	.000633	.000183	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001100	.000133	....	....	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001167	.000034	....	....	
9,500	38,000	.001233	.000066	....	....	
9,750	39,000	.001267	.000034	....	....	
10,000	40,000	.001333	.000066	....	....	
10,250	41,000	.001400	.000067	....	....	
10,500	42,000	.001400	0.	....	....	
10,750	43,000	.001433	.000033	....	....	
11,000	44,000	.001500	.000067	....	....	Elastic limit.
11,250	45,000	.014000	.012500	....	....	
11,500	46,000	.014933	.000933	....	....	
11,750	47,000	.015367	.000434	....	....	
12,000	48,000	.016667	.001300	....	....	
12,250	49,000	.017667	.001000	....	....	
12,500	50,000	.019033	.001366	....	....	
13,000	52,000	.021600	.002567	....	....	
13,500	54,000	.024667	.003067	....	....	
14,000	56,000	.027833	.003166	....	....	
14,500	58,000	.031333	.003500	....	....	
15,000	60,000	.035000	.003667	....	....	
15,500	62,000	.039333	.004333	....	....	
16,000	64,000	.044667	.005334	....	....	
16,500	66,000	.050667	.006000	....	....	
17,000	68,000	.056333	.005666	....	....	
17,500	70,000	.0633	.006967	....	....	
18,000	72,000	.0733	.0100	....	....	
18,500	74,000	.0900	.0167	....	....	
19,000	76,000	.1167	.0267	....	....	
19,280	77,120	.1600	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	77,120
Elastic limit per square inch of original section	do ..	44,000
Elongation per inch after rupture	inch..	0.1667
Elongation per inch under strain at elastic limit	do...	.001500
Reduction in diameter at point of rupture	do...	.064
Reduction in area after rupture, per centum of original section		21.4
Position of rupture		1″.4 from neck

Character of broken surface, granular, radiating from a flaky spot at circumference; opened small cracks in surface of stem.

Elongation of inch sections ....″.16, ″.20*, ″.14

No. 2482.

Marks, $\overset{8\ T_{41}}{M\ T_{1}\ O}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001100	.000133	....	....	
9, 000	36, 000	.001133	.000033	....	....	
9, 250	37, 000	.001167	.000034	....	....	
9, 500	38, 000	.001200	.000033	....	....	
9, 750	39, 000	.001233	.000033	....	....	
10, 000	40, 000	.001333	.000100	....	....	
10, 250	41, 000	.001400	.000067	....	....	
10, 500	42, 000	.001433	.000033	....	....	
10, 750	43, 000	.001433	0.	....	....	
11, 000	44, 000	.001500	.000067	....	....	Elastic limit.
11, 250	45, 000	.014500	.013000	....	....	
11, 500	46, 000	.015667	.001167	....	....	
11, 750	47, 000	.016400	.000733	....	....	
12, 000	48, 000	.018000	.001600	....	....	
12, 250	49, 000	.018833	.000833	....	....	
12, 500	50, 000	.020333	.001500	....	....	
13, 000	52, 000	.023333	.003000	....	....	
13, 500	54, 000	.026000	.002667	....	....	
14, 000	56, 000	.029333	.003333	....	....	
14, 500	58, 000	.032900	.003567	....	....	
15, 000	60, 000	.037233	.004333	....	....	
15, 500	62, 000	.041700	.004467	....	....	
16, 000	64, 000	.047667	.005967	....	....	
16, 500	66, 000	.055667	.008000	....	....	
17, 000	68, 000	.061033	.005366	....	....	
17, 500	70, 000	.0667	.005667	....	....	
18, 000	72, 000	.0833	.0166	....	....	
18, 500	74, 000	.1033	.0200	....	....	
19, 000	76, 000	.1433	.0400	....	....	
19, 060	76, 240	.1667	.0234	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76, 240
Elastic limit per square inch of original section	do...	44, 000
Elongation per inch after rupture	inch..	0. 2433
Elongation per inch under strain at elastic limit	do...	.001500
Reduction in diameter at point of rupture	do...	.154
Reduction in area after rupture, per centum of original section		47. 2
Position of rupture		1 inch from neck
Character of broken surface		silky
Elongation of inch sections		".40, ".20, ".13

No. 2483.

Marks, $\overset{8\ T_{41}}{M\ T_6\ M}$
Diameter, ″.565.
Sectional area, .25 square inch.

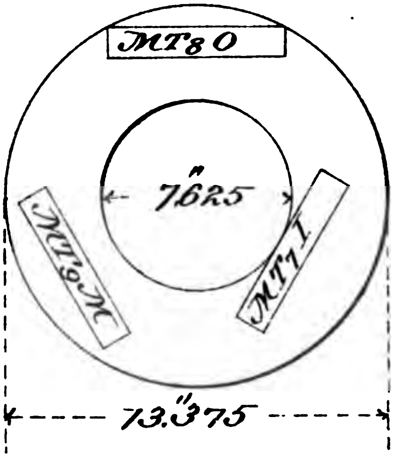
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	—.000033	—.000033	Initial load.
1,250	5,000	.000100	.000100	—.000033	0.	
2,500	10,000	.000233	.000133	—.000033	0.	
3,750	15,000	.000400	.000167	—.000033	0.	
5,000	20,000	.000567	.000167	—.000033	0.	
6,250	25,000	.000767	.000200	—.000033	0.	
7,500	30,000	.000933	.000166	....	....	
8,750	35,000	.001067	.000134	....	....	
9,000	36,000	.001100	.000033	....	....	
9,250	37,000	.001133	.000033	....	....	
9,500	38,000	.001200	.000067	....	....	
9,750	39,000	.001233	.000033	....	....	
10,000	40,000	.001267	.000034	....	....	
10,250	41,000	.001300	.000033	....	....	
10,500	42,000	.001333	.000033	....	....	
10,750	43,000	.001367	.000034	....	....	Elastic limit.
11,000	44,000	.013333	.011966	....	....	
11,250	45,000	.013733	.000400	....	....	
11,500	46,000	.014667	.000934	....	....	
11,750	47,000	.015667	.001000	....	....	
12,000	48,000	.017067	.001400	....	....	
12,250	49,000	.018167	.001100	....	....	
12,500	50,000	.019500	.001333	....	....	
13,000	52,000	.022367	.002867	....	....	
13,500	54,000	.025500	.003133	....	....	
14,000	56,000	.028367	.002867	....	....	
14,500	58,000	.031733	.003366	....	....	
15,000	60,000	.035500	.003767	....	....	
15,500	62,000	.040000	.004500	....	....	
16,000	64,000	.044667	.004667	....	....	
16,500	66,000	.050333	.005666	....	....	
17,000	68,000	.058667	.008334	....	....	
17,500	70,000	.0667	.008033	....	....	
18,000	72,000	.0733	.0066	....	....	
18,500	74,000	.0900	.0167	....	....	
19,000	76,000	.1100	.0200	....	....	
19,350	77,400	.1567	.0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	**77,400**
Elastic limit per square inch of original section..........do...	**43,000**
Elongation per inch after rupture..........inch..	**0.2333**
Elongation per inch under strain at elastic limit..........do...	**.001367**
Reduction in diameter at point of rupture..........do...	**.165**
Reduction in area after rupture, per centum of original section..........	**49.7**
Position of rupture..........	**″.80 from neck**
Character of broken surface..........	**silky**
Elongation of inch sections..........	**″.42*, ″.16, ″.12**

Tube No. 41 8″ converted Rifle

Additional specimens



No. 2558.

Marks, $\overset{8\ T_{41}}{\mathrm{MT,\ I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000233	.000133	0.	....	
3,750	15,000	.000400	.000167	0.	....	
5,000	20,000	.000600	.000200	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001067	.000134	0.	....	
9,000	36,000	.001100	.000033	....	....	
9,250	37,000	.001167	.000067	....	....	
9,500	38,000	.001200	.000033	....	....	
9,750	39,000	.001233	.000033	....	....	
10,000	40,000	.001267	.000034	....	....	
10,250	41,000	.001300	.000033	....	....	
10,500	42,000	.001367	.000067	....	....	
10,750	43,000	.001400	.000033	....	....	Elastic limit.
11,000	44,000	.011000	.009600	....	....	
11,250	45,000	.011667	.000667	....	....	
11,500	46,000	.012867	.001200	....	....	
11,750	47,000	.013733	.000866	....	....	
12,000	48,000	.015567	.001834	....	....	
12,250	49,000	.016167	.000600	....	....	
12,500	50,000	.017500	.001333	....	....	
13,000	52,000	.020333	.002833	....	....	
13,500	54,000	.023000	.002667	....	....	
14,000	56,000	.026100	.003100	....	....	
14,500	58,000	.029600	.003500	....	....	
15,000	60,000	.033000	.003400	....	....	
15,500	62,000	.038167	.005167	....	....	
16,000	64,000	.0433	.005133	....	....	
16,500	66,000	.0533	.0100	....	....	
17,000	68,000	.0600	.0067	....	....	
17,500	70,000	.0700	.0100	....	....	
18,000	72,000	.0767	.0067	....	....	
18,500	74,000	.0967	.0200	....	....	
19,000	76,000	.1400 .1633	.0433 .0233	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section........................pounds..	76,000
Elastic limit per square inch of original section........................do...	43,000
Elongation per inch after rupture........................inch..	0.2000
Elongation per inch under strain at elastic limit........................do...	.001400
Reduction in diameter at point of rupture........................do...	.134
Reduction in area after rupture, per centum of original section........................	41.9
Position of rupture........................	1″.65 from neck
Character of broken surface........................	silky
Elongation of inch sections........................	″.13, ″.34*, ″.13

No. 2559.

Marks, $\begin{matrix}8\,T_{41}\\ M\,T_{30}\end{matrix}$.
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000800	.000200	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001067	.000100	....	....	
9, 000	36, 000	.001133	.000066	....	....	
9, 250	37, 000	.001167	.000034	....	....	
9, 500	38, 000	.001200	.000033	....	....	
9, 750	39, 000	.001267	.000067	....	....	Elastic limit.
10, 000	40, 000	.001367	.000100	....	....	
10, 250	41, 000	.001833	.000466	....	....	
10, 500	42, 000	.012000	.010167	....	....	
10, 750	43, 000	.013000	.001000	....	....	
11, 000	44, 000	.013700	.000700	....	....	
11, 250	45, 000	.014367	.000667	....	....	
11, 500	46, 000	.015667	.001300	....	....	
11, 750	47, 000	.016667	.001000	....	....	
12, 000	48, 000	.018033	.001366	....	....	
12, 250	49, 000	.019167	.001134	....	....	
12, 500	50, 000	.020700	.001533	....	....	
13, 000	52, 000	.023500	.002800	....	....	
13, 500	54, 000	.026667	.003167	....	....	
14, 000	56, 000	.030000	.003333	....	....	
14, 500	58, 000	.034000	.004000	....	....	
15, 000	60, 000	.037833	.003833	....	....	
15, 500	62, 000	.0433	.005467	....	....	
16, 000	64, 000	.0500	.0067	....	....	
16, 500	66, 000	.0600	.0100	....	....	
17, 000	68, 000	.0700	.0100	....	....	
17, 500	70, 000	.0800	.0100	....	....	
18, 000	72, 000	.0933	.0133	....	....	
18, 500	74, 000	.1100	.0167	....	....	
18, 910	75, 640	.1833	.0733	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	75, 640
Elastic limit per square inch of original section	do...	39, 000
Elongation per inch after rupture	inch..	0. 2733
Elongation per inch under strain at elastic limit	do...	.001267
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section		52. 2
Position of rupture		1″.25 from neck
Character of broken surface		silky
Elongation of inch sections		″.17, ″.31, ″.34*

No. 2560.

Marks, $\overset{8\ T_4}{M\ T, M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001100	.000167	....	....	
9, 000	36, 000	.001133	.000033	....	....	
9, 250	37, 000	.001167	.000034	....	....	
9, 500	38, 000	.001233	.000066	....	....	Elastic limit.
9, 750	39, 000	.001367	.000034	....	....	
10, 000	40, 000	.001467	.000100	....	....	
10, 250	41, 000	.010267	.008800	....	....	
10, 500	42, 000	.011000	.000733	....	....	
10, 750	43, 000	.011733	.000733	....	....	
11, 000	44, 000	.013000	.001267	....	....	
11, 250	45, 000	.013733	.000733	....	....	
11, 500	46, 000	.014867	.001134	....	....	
11, 750	47, 000	.015833	.000966	....	....	
12, 000	48, 000	.017367	.001534	....	....	
12, 250	49, 000	.018300	.000933	....	....	
12, 500	50, 000	.019667	.001367	....	....	
13, 000	52, 000	.022333	.002666	....	....	
13, 500	54, 000	.025500	.003167	....	....	
14, 000	56, 000	.029000	.003500	....	....	
14, 500	58, 000	.032167	.003167	....	....	
15, 000	60, 000	.035667	.003500	....	....	
15, 500	62, 000	.040833	.005166	....	....	
16, 000	64, 000	.0467	.005867	....	....	
16, 500	66, 000	.0567	.0100	....	....	
17, 000	68, 000	.0667	.0100	....	....	
17, 500	70, 000	.0733	.0066	....	....	
18, 000	72, 000	.0833	.0100	....	....	
18, 500	74, 000	.1000	.0167	....	....	
19, 000	76, 000	.1300	.0300	....	....	
19, 140	76, 560	.1700	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	76, 560
Elastic limit per square inch of original section	do	38, 000
Elongation per inch after rupture	inch	0. 1767
Elongation per inch under strain at elastic limit	do	.001233
Reduction in diameter at point of rupture	do	.074
Reduction in area after rupture, per centum of original section		24. 0
Position of rupture		″.90 from neck
Character of broken surface, granular; flaky spot near the circumference; opened cracks in surface of stem.		
Elongation of inch sections		″.23*, ″.17, ″.13

No. 1135.

Marks, $^{8\,T_{48}}_{B\,T_{1}\,I}$.
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000300	.000200	0.	....	
3, 750	15, 000	.000433	.000133	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000733	.000133	0.	....	
7, 500	30, 000	.000900	.000167	0.	....	
8, 750	35, 000	.001100	.000200	....	....	
9, 000	36, 000	.001133	.000033	....	....	
9, 250	37, 000	.001167	.000034	....	....	
9, 500	38, 000	.001233	.000066	....	....	Elastic limit.
9, 750	39, 000	.001367	.000134	....	....	
10, 000	40, 000	.002500	.001133	....	....	
10, 250	41, 000	.004167	.001667	....	....	
10, 500	42, 000	.006167	.002000	....	....	
10, 750	43, 000	.007500	.001333	....	....	
11, 000	44, 000	.008333	.000833	....	....	
11, 250	45, 000	.009767	.001434	.008067	.008067	
11, 500	46, 000	.011000	.001233	....	....	
11, 750	47, 000	.011667	.000667	....	....	
12, 000	48, 000	.013333	.001666	....	....	
12, 250	49, 000	.014933	.001600	....	....	
12, 500	50, 000	.016467	.001534	.011467	.006400	
12, 750	51, 000	.017067	.000600	....	....	
13, 000	52, 000	.018133	.001066	....	....	
13, 250	53, 000	.019833	.001700	....	....	
13, 500	54, 000	.021833	.002000	....	....	
13, 750	55, 000	.023333	.001500	....	....	
14, 000	56, 000	.025333	.002000	....	....	
14, 250	57, 000	.027467	.002134	....	....	
14, 500	58, 000	.029500	.002033	....	....	
14, 750	59, 000	.032000	.002500	....	....	
15, 000	60, 000	.034333	.002333	....	....	
15, 500	62, 000	.038667	.004334	....	....	
16, 000	64, 000	.045067	.006400	....	....	
16, 500	66, 000	.052000	.006933	....	....	
17, 000	68, 000	.061500	.009500	....	....	
17, 500	70, 000	.075000	.013500	....	....	
18, 000	72, 000	.1067	.0317	....	....	
18, 400	73, 600	.1833	.0766	....	....	Tensile strength.

General summary.

Specific gravity		7.8590
Hardness		12.36
Tensile strength per square inch of original section	pounds..	73, 600
Elastic limit per square inch of original section	do...	38, 000
Elongation per inch after rupture	inch..	0.2400
Elongation per inch under strain at elastic limit	do...	.001233
Reduction in diameter at point of rupture	do...	.114
Reduction in area after rupture, per centum of original section		36.4
Position of rupture		at middle of stem
Character of broken surface		silky; numerous cracks developed in surface of stem
Elongation of inch sections		″.19, ″.36*, ″.17

No. 1136.

Marks, $\substack{8\,T_{42}\\ B\,T_{2}\,O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000300	.000200	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001100	.000133	0.	....	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001200	.000067	....	....	
9,500	38,000	.001300	.000100	....	....	
9,750	39,000	.001367	.000067	....	....	Elastic limit.
10,000	40,000	.001633	.000266	.002500	.002500	
10,250	41,000	.006000	.004367	....	....	
10,500	42,000	.007167	.001167	....	....	
10,750	43,000	.007800	.000633	....	....	
11,000	44,000	.008900	.001100	....	....	
11,250	45,000	.009867	.000967	.008200	.005700	
11,500	46,000	.011600	.001733	....	....	
11,750	47,000	.012533	.000933	....	....	
12,000	48,000	.013500	.000967	....	....	
12,250	49,000	.014667	.001167	....	....	
12,500	50,000	.016067	.001500	.014100	.005900	
12,750	51,000	.016767	.000700	....	....	
13,000	52,000	.018400	.001633	....	....	
13,250	53,000	.020000	.001600	....	....	
13,500	54,000	.021933	.001933	....	....	
13,750	55,000	.023433	.001500	....	....	
14,000	56,000	.025500	.002067	....	....	
14,250	57,000	.027667	.002167	....	....	
14,500	58,000	.029667	.002000	....	....	
14,750	59,000	.031333	.001666	....	....	
15,000	60,000	.033567	.002234	....	....	
15,500	62,000	.038267	.004700	....	....	
16,000	64,000	.043733	.005466	....	....	
16,500	66,000	.051167	.007434	....	....	
17,000	68,000	.060000	.008833	....	....	
17,500	70,000	.071667	.011667	....	....	
18,000	72,000	.0933	.021633	....	....	
18,500	74,000	.1267	.0334	....	....	
18,610	74,440	.1767	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	74,440
Elastic limit per square inch of original section	do...	39,000
Elongation per inch after rupture	inch..	0.2833
Elongation per inch under strain at elastic limit	do...	.001367
Reduction in diameter at point of rupture	do...	.194
Reduction in area after rupture, per centum of original section		57.0
Position of rupture		¼ inch from middle of stem
Character of broken surface		silky; cup-shaped end
Elongation of inch sections		″.19, ″.47*, ″.19

No. 1137.

Marks, $\overset{8\,T_4}{B\,T_3\,M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000300	.000200	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.001000	.000200	.000033	.000033	
8,750	35,000	.001233	.000233	.000167	.000134	Elastic limit.
9,000	36,000	.006933	.005700	....	....	
9,250	37,000	.007567	.000634	....	....	
9,500	38,000	.008667	.001100	....	....	
9,750	39,000	.009800	.001133	....	....	
10,000	40,000	.010833	.001033	.009500	.009433	
10,250	41,000	.011600	.000767	....	....	
10,500	42,000	.012900	.001300	....	....	
10,750	43,000	.014167	.001267	....	....	
11,000	44,000	.015500	.001333	....	....	
11,250	45,000	.017067	.001567	....	....	
11,500	46,000	.018367	.001300	....	....	
11,750	47,000	.019333	.000966	....	....	
12,000	48,000	.020933	.001600	....	....	
12,250	49,000	.022300	.001367	....	....	
12,500	50,000	.024067	.001767	....	....	
12,750	51,000	.025667	.001600	....	....	
13,000	52,000	.027167	.001500	....	....	
13,250	53,000	.029000	.001833	....	....	
13,500	54,000	.031333	.002133	....	....	
13,750	55,000	.033333	.002200	....	....	
14,000	56,000	.035167	.001834	....	....	
14,250	57,000	.037267	.002100	....	....	
14,500	58,000	.040200	.002933	....	....	
14,750	59,000	.042500	.002300	....	....	
15,000	60,000	.046000	.003500	....	....	
15,500	62,000	.052833	.006833	....	....	
16,000	64,000	.060667	.007834	....	....	
16,500	66,000	.071667	.011000	....	....	
17,000	68,000	.0933	.021633	....	....	
17,500	70,000	.1133	.0200	....	....	
17,880	71,520	.1700	.0567	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	71,520
Elastic limit per square inch of original section	do ..	35,000
Elongation per inch after rupture	inch..	0.2667
Elongation per inch under strain at elastic limit	do...	.001233
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44.6
Position of rupture		1″.10 from neck
Character of broken surface		silky; cracks in surface of stem near point of rupture
Elongation of inch sections		″.39*, ″.25, ″.16

No. 1138.

Marks, $\overset{8}{\text{M}}\,\overset{\text{T}_{42}}{\text{T}_1}\,\text{I}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000533	.000200	0.	....	
5,000	20,000	.000733	.000200	0.	....	
6,250	25,000	.000900	.000167	0.	....	
7,500	30,000	.001067	.000167	0.	....	
8,750	35,000	.001200	.000133	0.	....	
9,000	36,000	.001233	.000033	....	....	
9,250	37,000	.001267	.000034	....	....	
9,500	38,000	.001333	.000066	....	....	
9,750	39,000	.001367	.000034	....	....	
10,000	40,000	.001400	.000033	.000133	.000133	Elastic limit.
10,250	41,000	.001533	.000133	....	....	
10,500	42,000	.001667	.000134	....	....	
10,750	43,000	.003733	.002066	....	....	
11,000	44,000	.005133	.001400	....	....	
11,250	45,000	.006767	.001634	.005200	.005067	
11,500	46,000	.007500	.000733	....	....	
11,750	47,000	.008667	.001167	....	....	
12,000	48,000	.009833	.001166	....	....	
12,250	49,000	.011333	.001500	....	....	
12,500	50,000	.012667	.001334	....	....	
12,750	51,000	.013300	.000633	....	....	
13,000	52,000	.014467	.001167	....	....	
13,250	53,000	.016000	.001533	....	....	
13,500	54,000	.017567	.001567	....	....	
13,750	55,000	.018333	.000766	....	....	
14,000	56,000	.019500	.001167	....	....	
14,250	57,000	.020767	.001267	....	....	
14,500	58,000	.022167	.001400	....	....	
14,750	59,000	.023600	.001433	....	....	
15,000	60,000	.025333	.001733	....	....	
15,500	62,000	.029033	.003700	....	....	
16,000	64,000	.032667	.003634	....	....	
16,500	66,000	.038000	.005333	....	....	
17,000	68,000	.042000	.004000	....	....	
17,500	70,000	.047333	.005333	....	....	
18,000	72,000	.055333	.008000	....	....	
18,500	74,000	.064833	.009500	....	....	
19,000	76,000	.078000	.013167	....	....	
19,500	78,000	.1100	.0320	....	....	
19,720	78,880	.1533	.0433	....	....	Tensile strength.

General summary.

Specific gravity.. 7.8514
Hardness.. 14.98
Tensile strength per square inch of original section....................pounds.. 78,880
Elastic limit per square inch of original section....................do... 40,000
Elongation per inch after rupture....................inch.. 0.2200
Elongation per inch under strain at elastic limit....................do... .001400
Reduction in diameter at point of rupture....................do... .154
Reduction in area after rupture, per centum of original section.................... 47.2
Position of rupture.................... ⅜ inch from middle of stem
Character of broken surface....................silky
Elongation of inch sections....................".16, ".38*, ".12

No. 1139.

Marks, $\overset{8}{M}\,\overset{T_{42}}{T_2}\,O$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001133	.000200	....	....	
9, 000	36, 000	.001167	.000034	....	....	
9, 250	37, 000	.001200	.000033	....	....	
9, 500	38, 000	.001233	.000033	....	....	
9, 750	39, 000	.001267	.000034	....	....	
10, 000	40, 000	.001300	.000033	.000033	.000033	
10, 250	41, 000	.001333	.000033	....	....	
10, 500	42, 000	.001367	.000034	....	....	Elastic limit.
10, 750	43, 000	.001500	.000133	....	....	
11, 000	44, 000	.002233	.000733	....	....	
11, 250	45, 000	.004033	.001800	.002433	.002400	
11, 500	46, 000	.005700	.001667	....	....	
11, 750	47, 000	.006833	.001133	....	....	
12, 000	48, 000	.008100	.001267	....	....	
12, 250	49, 000	.009100	.001000	....	....	
12, 500	50, 000	.010667	.001567	.008733	.006300	
12, 750	51, 000	.011333	.000666	....	....	
13, 000	52, 000	.012267	.000934	....	....	
13, 250	53, 000	.013267	.001000	....	....	
13, 500	54, 000	.014733	.001466	....	....	
13, 750	55, 000	.015667	.000934	....	....	
14, 000	56, 000	.017067	.001400	....	....	
14, 250	57, 000	.018167	.001100	....	....	
14, 500	58, 000	.019500	.001333	....	....	
14, 750	59, 000	.021067	.001567	....	....	
15, 000	60, 000	.023000	.001933	....	....	
15, 500	62, 000	.025567	.002567	....	....	
16, 000	64, 000	.029000	.003433	....	....	
16, 500	66, 000	.033000	.004000	....	....	
17, 000	68, 000	.037500	.004500	....	....	
17, 500	70, 000	.042833	.005333	....	....	
18, 000	72, 000	.048667	.005834	....	....	
18, 500	74, 000	.056667	.008000	....	....	
19, 000	76, 000	.066000	.009333	....	....	
19, 500	78, 000	.082000	.0160	....	....	
20, 000	80, 000	.1133	.0313	....	....	
20, 140	80, 560	.1600	.0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80, 560
Elastic limit per square inch of original section	do...	42, 000
Elongation per inch after rupture	inch..	0. 2433
Elongation per inch under strain at elastic limit	do...	.001367
Reduction in diameter at point of rupture	do...	.154
Reduction in area after rupture, per centum of original section		47. 2
Position of rupture		″.15 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.20, ″.40*, ″.13

No. 1140.

Marks, $\overset{8\,T_{a}}{M\,T_{1}\,M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000233	.000233	.000067	.000067	
2,500	10,000	.000433	.000200	.000067	0.	
3,750	15,000	.000633	.000200	.000100	.000033	
5,000	20,000	.000800	.000167	.000133	.000033	
6,250	25,000	.000967	.000167	.000133	0.	
7,500	30,000	.001133	.000166	.000133	0.	
8,750	35,000	.001433	.000300	.000300	.000167	
9,000	36,000	.001533	.000100	....	....	Elastic limit.
9,250	37,000	.002133	.000600	....	....	
9,500	38,000	.002867	.000734	....	....	
9,750	39,000	.006233	.003366	....	....	
10,000	40,000	.008367	.002134	.006900	.006600	
10,250	41,000	.009000	.000633	....	....	
10,500	42,000	.009533	.000533	....	....	
10,750	43,000	.010633	.001100	....	....	
11,000	44,000	.011933	.001300	....	....	
11,250	45,000	.013033	.001100	....	....	
11,500	46,000	.014333	.001300	....	....	
11,750	47,000	.015567	.001234	....	....	
12,000	48,000	.016733	.001166	....	....	
12,250	49,000	.017800	.001067	....	....	
12,500	50,000	.018833	.001033	....	....	
12,750	51,000	.020067	.001234	....	....	
13,000	52,000	.021500	.001433	....	....	
13,250	53,000	.022667	.001167	....	....	
13,500	54,000	.024367	.001600	....	....	
13,750	55,000	.025567	.001200	....	....	
14,000	56,000	.027533	.001966	....	....	
14,250	57,000	.029067	.001534	....	....	
14,500	58,000	.031333	.002266	....	....	
14,750	59,000	.032833	.001500	....	....	
15,000	60,000	.035500	.002667	....	....	
15,500	62,000	.039333	.003833	....	....	
16,000	64,000	.044667	.005334	....	....	
16,500	66,000	.051167	.006500	....	....	
17,000	68,000	.057833	.006666	....	....	
17,500	70,000	.067667	.009834	....	....	
18,000	72,000	.0867	.021033	....	....	
18,500	74,000	.1033	.0166	....	....	
19,000	76,000	.1400	.0367	....	....	
19,020	76,080	.1767	.0367	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 76,080
Elastic limit per square inch of original section ....do... 36,000
Elongation per inch after rupture ....inch.. 0.2000
Elongation per inch under strain at elastic limit ....do... .001533
Reduction in diameter at point of rupture ....do... .064
Reduction in area after rupture, per centum of original section 21.4
Position of rupture ....″.4 from middle of stem
Character of broken surface ....granular; dull flaky spot at circumference
Elongation of inch sections ....″.19, ″.24*, ″.17

No. 1141.

Marks, $\overset{8\ T_{43}}{\text{B T, I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000767	.000134	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001100	.000167	0.	....	
10, 000	40, 000	.001267	.000167	.000033	.000033	Elastic limit.
10, 250	41, 000	.004667	.003400	....	....	
10, 500	42, 000	.006100	.001433	....	....	
10, 750	43, 000	.006667	.000567	....	....	
11, 000	44, 000	.007933	.001266	....	....	
11, 250	45, 000	.009000	.001067	.007367	.007334	
11, 500	46, 000	.009900	.000900	....	....	
11, 750	47, 000	.010867	.000967	....	....	
12, 000	48, 000	.012167	.001300	....	....	
12, 250	49, 000	.014000	.001833	....	....	
12, 500	50, 000	.015267	.001267	....	....	
12, 750	51, 000	.016433	.001166	....	....	
13, 000	52, 000	.017833	.001400	....	....	
13, 250	53, 000	.019033	.001200	....	....	
13, 500	54, 000	.020800	.001767	....	....	
13, 750	55, 000	.022167	.001367	....	....	
14, 000	56, 000	.024500	.002333	....	....	
14, 250	57, 000	.025667	.001167	....	....	
14, 500	58, 000	.027933	.002266	....	....	
14, 750	59, 000	.029800	.001867	....	....	
15, 000	60, 000	.031933	.002133	....	....	
15, 500	62, 000	.036400	.004467	....	....	
16, 000	64, 000	.041800	.005400	....	....	
16, 500	66, 000	.049500	.007700	....	....	
17, 000	68, 000	.057333	.007833	....	....	
17, 500	70, 000	.068500	.011167	....	....	
18, 000	72, 000	.0933	.0248	....	....	
18, 500	74, 000	.1133	.0200	....	....	
18, 700	74, 800	.1733	.0600	....	....	Tensile strength.

General summary.

Specific gravity		7. 8571
Hardness		12. 72
Tensile strength per square inch of original section	pounds..	74, 800
Elastic limit per square inch of original section	do...	40, 000
Elongation per inch after rupture	inch..	0. 2500
Elongation per inch under strain at elastic limit	do...	.001267
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		″.16, ″.44*, ″.15

No. 1142.

Marks, $^{8\,T\,43}_{B\,T_2\,O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000467	.000200	0.	....	
5, 000	20, 000	.000667	.000200	0.	....	
6, 250	25, 000	.000800	.000133	0.	....	
7, 500	30, 000	.000967	.000167	.000033	.000033	
8, 750	35, 000	.001133	.000166	.000067	.000034	
9, 000	36, 000	.001200	.000067	....	....	
9, 250	37, 000	.001233	.000033	....	....	
9, 500	38, 000	.001267	.000034	....	....	
9, 750	39, 000	.001367	.000100	....	....	
10, 000	40, 000	.001400	.000033	.000200	.000133	Elastic limit.
10, 250	41, 000	.003367	.001967	....	....	
10, 500	42, 000	.005767	.001400	....	....	
10, 750	43, 000	.006533	.000766	....	....	
11, 000	44, 000	.007500	.000967	....	....	
11, 250	45, 000	.008733	.001233	.007067	.006867	
11, 500	46, 000	.009500	.000767	....	....	
11, 750	47, 000	.010400	.000900	....	....	
12, 000	48, 000	.012067	.001667	....	....	
12, 250	49, 000	.013233	.001166	....	....	
12, 500	50, 000	.014267	.001034	....	....	
12, 750	51, 000	.015400	.001133	....	....	
13, 000	52, 000	.016867	.001467	....	....	
13, 250	53, 000	.018000	.001133	....	....	
13, 500	54, 000	.019567	.001567	....	....	
13, 750	55, 000	.020867	.001300	....	....	
14, 000	56, 000	.022600	.001733	....	....	
14, 250	57, 000	.024100	.001500	....	....	
14, 500	58, 000	.026000	.001900	....	....	
14, 750	59, 000	.027400	.001400	....	....	
15, 000	60, 000	.029867	.002467	....	....	
15, 500	62, 000	.033733	.003866	....	....	
16, 000	64, 000	.038167	.004434	....	....	
16, 500	66, 000	.044333	.006166	....	....	
17, 000	68, 000	.051667	.007334	....	....	
17, 500	70, 000	.059500	.007833	....	....	
18, 000	72, 000	.070667	.011167	....	....	
18, 500	74, 000	.088667	.018000	....	....	
19, 000	76, 000	.1400	.051333	....	....	
19, 010	76, 040	.1533	.0133	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	76, 040
Elastic limit per square inch of original section ....do...	40, 000
Elongation per inch after rupture ....inch..	0. 2400
Elongation per inch under strain at elastic limit ....do...	.001400
Reduction in diameter at point of rupture ....do...	.174
Reduction in area after rupture, per centum of original section	52. 2
Position of rupture	″.85 from neck
Character of broken surface	silky
Elongation of inch sections	″.44*, ″.17, ″.11

No. 1143.

Marks, $^{8\,T\,4}_{B\,T,\,M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	**Initial load.**
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001100	.000167	0.	....	
9, 000	36, 000	.001133	.000033	....	....	
9, 250	37, 000	.001133	0.	....	....	
9, 500	38, 000	.001167	.000034	....	....	
9, 750	39, 000	.001200	.000033	....	....	**Elastic limit.**
10, 000	40, 000	.002500	.001300	.001267	.001267	
10, 250	41, 000	.004967	.002467	....	....	
10, 500	42, 000	.006500	.001533	....	....	
10, 750	43, 000	.007600	.001100	....	....	
11, 000	44, 000	.008733	.001133	....	....	
11, 250	45, 000	.009633	.000900	.008033	.006766	
11, 500	46, 000	.010767	.001134	....	....	
11, 750	47, 000	.011500	.000733	....	....	
12, 000	48, 000	.012833	.001333	....	....	
12, 250	49, 000	.013933	.001100	....	....	
12, 500	50, 000	.015500	.001567	....	....	
12, 750	51, 000	.016867	.001367	....	....	
13, 000	52, 000	.018333	.001466	....	....	
13, 250	53, 000	.019500	.001167	....	....	
13, 500	54, 000	.021167	.001667	....	....	
13, 750	55, 000	.022900	.001733	....	....	
14, 000	56, 000	.024167	.001267	....	....	
14, 250	57, 000	.026000	.001833	....	....	
14, 500	58, 000	.028300	.002300	....	....	
14, 750	59, 000	.030000	.001700	....	....	
15, 000	60, 000	.032333	.002333	....	....	
15, 500	62, 000	.036833	.004500	....	....	
16, 000	64, 000	.042333	.005500	....	....	
16, 500	66, 000	.048333	.006000	....	....	
17, 000	68, 000	.055500	.007167	....	....	
17, 500	70, 000	.065833	.010333	....	....	
18, 000	72, 000	.081667	.015834	....	....	
18, 500	74, 000	.1133	.031633	....	....	
18, 760	75, 040	.1767	.0634	....	....	**Tensile strength.**

General summary.

Tensile strength per square inch of original section	pounds..	75, 040
Elastic limit per square inch of original section	do...	39, 000
Elongation per inch after rupture	inch..	0. 2900
Elongation per inch under strain at elastic limit	do...	.001200
Reduction in diameter at point of rupture	do..	.184
Reduction in area after rupture, per centum of original section		54. 6
Position of rupture		¼ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.21, ″.49, ″.17

No. 1144.

Marks, $\overset{\text{8 Ta}}{\text{M T, I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000307	.000200	0.	....	
3, 750	15, 000	.000533	.000166	0.	....	
5, 000	20, 000	.000700	.000167	.000033	.000033	
6, 250	25, 000	.000867	.000167	.000033	0.	
7, 500	30, 000	.001033	.000166	.000033	0.	
8, 750	35, 000	.001200	.000167	.000067	.000034	
9, 000	36, 000	.001267	.000067	....	....	
9, 250	37, 000	.001333	.000066	....	....	Elastic limit.
9, 500	38, 000	.003133	.001800	....	....	
9, 750	39, 000	.007833	.004700	....	....	
10, 000	40, 000	.009633	.001800	.008067	.008000	
10, 250	41, 000	.010167	.000534	....	....	
10, 500	42, 000	.010800	.000633	....	....	
10, 750	43, 000	.011600	.000800	....	....	
11, 000	44, 000	.012700	.001100	....	....	
11, 250	45, 000	.013600	.000900	.011900	.003833	
11, 500	46, 000	.015233	.001633	....	....	
11, 750	47, 000	.015833	.000600	....	....	
12, 000	48, 000	.017033	.001200	....	....	
12, 250	49, 000	.018167	.001134	....	....	
12, 500	50, 000	.019500	.001333	....	....	
12, 750	51, 000	.020500	.001000	....	....	
13, 000	52, 000	.022067	.001567	....	....	
13, 250	53, 000	.023267	.001200	....	....	
13, 500	54, 000	.024933	.001666	....	....	
13, 750	55, 000	.026333	.001400	....	....	
14, 000	56, 000	.027867	.001534	....	....	
14, 250	57, 000	.029200	.001333	....	....	
14, 500	58, 000	.031167	.001967	....	....	
14, 750	59, 000	.032733	.001566	....	....	
15, 000	60, 000	.035000	.002267	....	....	
15, 500	62, 000	.039167	.004167	....	....	
16, 000	64, 000	.043733	.004566	....	....	
16, 500	66, 000	.049167	.005434	....	....	
17, 000	68, 000	.054500	.005333	....	....	
17, 500	70, 000	.063000	.008500	....	....	
18, 000	72, 000	.072333	.009333	....	....	
18, 500	74, 000	.0900	.017667	....	....	
19, 000	76, 000	.1033	.0133	....	....	
19, 500	78, 000	.1367	.0334	....	....	
19, 610	78, 440	.1733	.0366	....	....	Tensile strength.

General summary.

Specific gravity	7.8537
Hardness	12.78
Tensile strength per square inch of original section....pounds..	78, 440
Elastic limit per square inch of original section....do...	37, 000
Elongation per inch after rupture....inch..	0.2333
Elongation per inch under strain at elastic limit....do...	.001333
Reduction in diameter at point of rupture....do...	.124
Reduction in area after rupture, per centum of original section	39.2
Position of rupture	1 inch from neck
Character of broken surface	silky; 50 per centum of surface slightly granular
Elongation of inch sections	″.35*, ″.18, ″.17

No. 1145.

Marks, $\overset{8\,T_{4}}{M\,T_{2}O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000333	.000200	0.	....	
3,750	15,000	.000467	.000134	0.	....	
5,000	20,000	.000667	.000200	.000033	.000033	
6,250	25,000	.000800	.000133	.000033	0.	
7,500	30,000	.000967	.000167	.000033	0.	
8,750	35,000	.001133	.000166	.000067	.000034	
9,000	36,000	.001167	.000034	....	....	
9,250	37,000	.001200	.000033	....	....	
9,500	38,000	.001233	.000033	....	....	Elastic limit.
9,750	39,000	.007067	.005834	....	....	
10,000	40,000	.009933	.002866	.008400	.008333	
10,250	41,000	.010767	.000834	....	....	
10,500	42,000	.012167	.001400	....	....	
10,750	43,000	.012967	.000800	....	....	
11,000	44,000	.014367	.001400	....	....	
11,250	45,000	.015200	.000833	.013433	.005033	
11,500	46,000	.015800	.000600	....	....	
11,750	47,000	.016500	.000700	....	....	
12,000	48,000	.018733	.002233	....	....	
12,250	49,000	.019333	.000600	....	....	
12,500	50,000	.020800	.001467	....	....	
12,750	51,000	.022333	.001533	....	....	
13,000	52,000	.023833	.001500	....	....	
13,250	53,000	.025167	.001334	....	....	
13,500	54,000	.026833	.001666	....	....	
13,750	55,000	.028667	.001834	....	....	
14,000	56,000	.030267	.001600	....	....	
14,250	57,000	.031733	.001466	....	....	
14,500	58,000	.033767	.002034	....	....	
14,750	59,000	.036333	.002566	....	....	
15,000	60,000	.038500	.002167	....	....	
15,500	62,000	.043200	.004700	....	....	
16,000	64,000	.048767	.005567	....	....	
16,500	66,000	.055333	.006566	....	....	
17,000	68,000	.063000	.007667	....	....	
17,500	70,000	.073667	.010667	....	....	
18,000	72,000	.0933	.019633	....	....	
18,500	74,000	.1100	.0167	....	....	
18,980	75,920	.1800	.0700	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	75,920
Elastic limit per square inch of original section	do...	38,000
Elongation per inch after rupture	inch..	0.2433
Elongation per inch under strain at elastic limit	do...	.001233
Reduction in diameter at point of rupture	do...	.124
Reduction in area after rupture, per centum of original section		39.2
Position of rupture		¼ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.19, ″.38*, ″.16

No. 1146.

Marks, $\overset{8}{M}\,\overset{T_{43}}{T_3}\,M$
Diameter, ″.563.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000900	.000133	0.	....	
8,750	35,000	.001100	.000200	.000033	.000033	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001200	.000067	....	....	Elastic limit.
9,500	38,000	.001367	.000167	....	....	
9,750	39,000	.003133	.001766	....	....	
10,000	40,000	.005133	.002000	....	....	
10,250	41,000	.006167	.001034	....	....	
10,500	42,000	.007167	.001000	....	....	
10,750	43,000	.007933	.000766	....	....	
11,000	44,000	.009033	.001100	....	....	
11,250	45,000	.010200	.001167	.008533	.008500	
11,500	46,000	.010633	.000433	....	....	
11,750	47,000	.011500	.000867	....	....	
12,000	48,000	.012833	.001333	....	....	
12,250	49,000	.013867	.001034	....	....	
12,500	50,000	.014967	.001100	....	....	
12,750	51,000	.016167	.001200	....	....	
13,000	52,000	.017400	.001233	....	....	
13,250	53,000	.018600	.001200	....	....	
13,500	54,000	.019767	.001167	....	....	
13,750	55,000	.021000	.001233	....	....	
14,000	56,000	.022533	.001533	....	....	
14,250	57,000	.023967	.001434	....	....	
14,500	58,000	.025267	.001300	....	....	
14,750	59,000	.026700	.001433	....	....	
15,000	60,000	.028767	.002067	....	....	
15,500	62,000	.032033	.003266	....	....	
16,000	64,000	.036333	.004300	....	....	
16,500	66,000	.040833	.004500	....	....	
17,000	68,000	.046333	.005500	....	....	
17,500	70,000	.053000	.006667	....	....	
18,000	72,000	.061333	.008333	....	....	
18,500	74,000	.071667	.010334	....	....	
19,000	76,000	.087667	.016000	....	....	
19,500	78,000	.1233	.035633	....	....	
19,670	78,680	.1600	.0367	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	78,680
Elastic limit per square inch of original section	do...	37,000
Elongation per inch after rupture	inch..	0.2033
Elongation per inch under strain at elastic limit	do...	.001200
Reduction in diameter at point of rupture	do...	.063
Reduction in area after rupture, per centum of original section		21.4
Position of rupture		″.1 from middle of stem
Character of broken surface		granular; dull, flaky spot at circumference
Elongation of inch sections		″.21, ″.24*, ″.16

No. 2152.

Marks, $\overset{8}{B}\,\overset{T_{44}}{T_1}\,I$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000833	.000166	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001167	.000167	0.	....	
10,000	40,000	.001367	.000200	.000067	.000067	Elastic limit.
10,250	41,000	.003500	.002133	....	....	
10,500	42,000	.005100	.001600	....	....	
10,750	43,000	.006400	.001300	....	....	
11,000	44,000	.009000	.002600	....	....	
11,250	45,000	.010233	.001233	....	....	
11,500	46,000	.011500	.001267	....	....	
11,750	47,000	.012500	.001000	....	....	
12,000	48,000	.013833	.001333	....	....	
12,250	49,000	.015167	.001334	....	....	
12,500	50,000	.016500	.001333	....	....	
13,000	52,000	.019067	.002567	....	....	
13,500	54,000	.022500	.003433	....	....	
14,000	56,000	.025667	.003167	....	....	
14,500	58,000	.029667	.004000	....	....	
15,000	60,000	.033167	.003500	....	....	
15,500	62,000	.038000	.004833	....	....	
16,000	64,000	.043267	.005267	....	....	
16,500	66,000	.049667	.006400	....	....	
17,000	68,000	.056667	.007000	....	....	
17,500	70,000	.0667	.010033	....	....	
18,000	72,000	.0800	.0133	....	....	
18,500	74,000	.1033	.0133	....	....	
18,850	75,400	.1600	.0567	....	....	Tensile strength.

General summary.

Specific gravity	7,8568
Hardness	12.36
Tensile strength per square inch of original section...pounds..	75,400
Elastic limit per square inch of original section...do...	40,000
Elongation per inch after rupture...inch..	0.1767
Elongation per inch under strain at elastic limit...do...	.001367
Reduction in diameter at point of rupture...do...	.154
Reduction in area after rupture, per centum of original section	47.2
Position of rupture	″.55 from neck
Character of broken surface, granular, 70 per centum; dull silky, 30 per centum; opened cracks in surface of stem.	
Elongation of inch sections	″.19*, ″.16, ″.18

No. 2153.

Marks, $\genfrac{}{}{0pt}{}{8\ T_{44}}{B\ T_{2}O}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000767	.000134	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001067	.000134	0.	....	
10, 000	40, 000	.001233	.000166	0.	....	
10, 250	41, 000	.001300	.000067	....	....	
10, 500	42, 000	.001367	.000067	....	....	
10, 750	43, 000	.001400	.000033	....	....	
11, 000	44, 000	.001433	.000033	....	....	Elastic limit.
11, 250	45, 000	.004333	.002900	....	....	
11, 500	46, 000	.007467	.003134	....	....	
11, 750	47, 000	.008667	.001200	....	....	
12, 000	48, 000	.009833	.001166	....	....	
12, 250	49, 000	.010700	.000867	....	....	
12, 500	50, 000	.011667	.000967	....	....	
13, 000	52, 000	.013733	.002066	....	....	
13, 500	54, 000	.017067	.003334	....	....	
14, 000	56, 000	.020100	.003033	....	....	
14, 500	58, 000	.023333	.003233	....	....	
15, 000	60, 000	.026167	.002834	....	....	
15, 500	62, 000	.029467	.003300	....	....	
16, 000	64, 000	.033267	.003800	....	....	
16, 500	66, 000	.037833	.004566	....	....	
17, 000	68, 000	.043500	.005667	....	....	
17, 500	70, 000	.051167	.007667	....	....	
18, 000	72, 000	.059500	.008333	....	....	
18, 500	74, 000	.071333	.011833	....	....	
19, 000	76, 000	.0967	.025367	....	....	
19, 400	77, 600	.1600	.0633	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	77, 600
Elastic limit per square inch of original section	do	44, 000
Elongation per inch after rupture	inch	0. 2600
Elongation per inch under strain at elastic limit	do	.001433
Reduction in diameter at point of rupture	do	.175
Reduction in area after rupture, per centum of original section		52. 2
Position of rupture		½ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.24, ″.41*, ″.13

No. 2154.

Marks, $\overset{8\ T_{44}}{B\ T,\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000833	.000200	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
8, 750	35, 000	.001133	.000133	0.	....	
9, 000	36, 000	.001167	.000134	....	....	
9, 250	37, 000	.001233	.000066	....	....	
9, 500	38, 000	.001267	.000034	....	....	
9, 750	39, 000	.001300	.000033	....	....	
10, 000	40, 000	.001367	.000067	....	....	
10, 250	41, 000	.001400	.000033	....	....	Elastic limit.
10, 500	42, 000	.001500	.000100	....	....	
10, 750	43, 000	.003400	.001900	....	....	
11, 000	44, 000	.005333	.001933	....	....	
11, 250	45, 000	.006533	.001200	....	....	
11, 500	46, 000	.007800	.001267	....	....	
11, 750	47, 000	.008700	.000900	....	....	
12, 000	48, 000	.009833	.001133	....	....	
12, 250	49, 000	.011067	.001234	....	....	
12, 500	50, 000	.012033	.000966	....	....	
13, 000	52, 000	.014267	.002234	....	....	
13, 500	54, 000	.016733	.002466	....	....	
14, 000	56, 000	.019367	.002634	....	....	
14, 500	58, 000	.022833	.003466	....	....	
15, 000	60, 000	.025833	.003000	....	....	
15, 500	62, 000	.029667	.003834	....	....	
16, 000	64, 000	.034000	.004333	....	....	
16, 500	66, 000	.037933	.003933	....	....	
17, 000	68, 000	.043333	.005400	....	....	
17, 500	70, 000	.051333	.008000	....	....	
18, 000	72, 000	.058000	.006667	....	....	
18, 500	74, 000	.068833	.010833	....	....	
19, 000	76, 000	.0900	.021167	....	....	
19, 500	78, 000	.1433	.0533	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section............pounds..	78, 000
Elastic limit per square inch of original section............do...	41, 000
Elongation per inch after rupture............inch..	0. 2633
Elongation per inch under strain at elastic limit............do...	.001400
Reduction in diameter at point of rupture............do...	.174
Reduction in area after rupture, per centum of original section............	52. 2
Position of rupture............	¼ inch from middle of stem
Character of broken surface............	silky
Elongation of inch sections............	″.18, ″.45*, ″.16

No. 2155.

Marks, $^{8\ T_{44}}_{M\ T_{1}\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	. 000100	. 000100	0.	....	
2, 500	10, 000	. 000300	. 000200	0.	....	
3, 750	15, 000	. 000467	. 000167	0.	....	
5, 000	20, 000	. 000633	. 000166	0.	....	
6, 250	25, 000	. 000800	. 000167	0.	....	
7, 500	30, 000	. 000967	. 000167	0.	....	
8, 750	35, 000	. 001133	. 000166	0.	....	
9, 000	36, 000	. 001133	0.	....	....	
9, 250	37, 000	. 001167	. 000034	....	....	
9, 500	38, 000	. 001233	. 000066	....	....	
9, 750	39, 000	. 001267	. 000034	....	....	
10, 000	40, 000	. 001367	. 000100	. 000033	. 000033	
10, 250	41, 000	. 001400	. 000033	....	....	
10, 500	42, 000	. 001400	0.	....	....	
10, 750	43, 000	. 001433	. 000033	....	....	
11, 000	44, 000	. 001467	. 000034	....	....	
11, 250	45, 000	. 001500	. 000033	. 000033	. 000033	
11, 500	46, 000	. 001567	. 000067	....	....	Elastic limit.
11, 750	47, 000	. 001700	. 000133	....	....	
12, 000	48, 000	. 005000	. 003300	....	....	
12, 250	49, 000	. 007667	. 002667	....	....	
12, 500	50, 000	. 009000	. 001333	....	....	
12, 750	51, 000	. 010333	. 001333	....	....	
13, 000	52, 000	. 010933	. 000600	....	....	
13, 250	53, 000	. 011667	. 000734	....	....	
13, 500	54, 000	. 012700	. 001033	....	....	
13, 750	55, 000	. 013733	. 001033	....	....	
14, 000	56, 000	. 015167	. 001434	....	....	
14, 250	57, 000	. 016600	. 001433	....	....	
14, 500	58, 000	. 018000	. 001400	....	....	
14, 750	59, 000	. 019000	. 001000	....	....	
15, 000	60, 000	. 020400	. 001400	....	....	
15, 500	62, 000	. 023500	. 003100	....	....	
16, 000	64, 000	. 026833	. 003333	....	....	
16, 500	66, 000	. 030400	. 003567	....	....	
17, 000	68, 000	. 034500	. 004100	....	....	
17, 500	70, 000	. 039000	. 005500	....	....	
18, 000	72, 000	. 044000	. 005000	....	....	
18, 500	74, 000	. 050667	. 006667	....	....	
19, 000	76, 000	. 058833	. 008166	....	....	
19, 500	78, 000	. 070500	. 011667	....	....	
20, 000	80, 000	. 0933	. 0228	....	....	
20, 410	81, 640	. 1567	. 0634	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section .... pounds..	81, 640
Elastic limit per square inch of original section .... do...	46, 000
Elongation per inch after rupture .... inch..	0. 1567
Elongation per inch under strain at elastic limit .... do...	. 001567
Reduction in diameter at point of rupture .... do...	. 064
Reduction in area after rupture, per centum of original section	21. 4
Position of rupture	″.70 from neck
Character of broken surface, granular; dull spot at circumference; opened cracks in surface of stem	
Elongation of inch sections	″.20*, ″.13, ″.14

No. 2154.

Marks, $\overset{8\,T_{44}}{B\,T_{3}\,M}$

Diameter, ".564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000833	.000200	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001133	.000133	0.	....	
9,000	36,000	.001167	.000134	....	....	
9,250	37,000	.001233	.000066	....	....	
9,500	38,000	.001267	.000034	....	....	
9,750	39,000	.001300	.000033	....	....	
10,000	40,000	.001367	.000067	....	....	
10,250	41,000	.001400	.000033	....	....	Elastic limit.
10,500	42,000	.001500	.000100	....	....	
10,750	43,000	.003400	.001900	....	....	
11,000	44,000	.005333	.001933	....	....	
11,250	45,000	.006533	.001200	....	....	
11,500	46,000	.007800	.001267	....	....	
11,750	47,000	.008700	.000900	....	....	
12,000	48,000	.009833	.001133	....	....	
12,250	49,000	.011067	.001234	....	....	
12,500	50,000	.012033	.000966	....	....	
13,000	52,000	.014267	.002234	....	....	
13,500	54,000	.016733	.002466	....	....	
14,000	56,000	.019367	.002634	....	....	
14,500	58,000	.022833	.003466	....	....	
15,000	60,000	.025833	.003000	....	....	
15,500	62,000	.029667	.003834	....	....	
16,000	64,000	.034000	.004333	....	....	
16,500	66,000	.037933	.003933	....	....	
17,000	68,000	.043333	.005400	....	....	
17,500	70,000	.051333	.008000	....	....	
18,000	72,000	.058000	.006667	....	....	
18,500	74,000	.068833	.010833	....	....	
19,000	76,000	.0900	.021167	....	....	
19,500	78,000	.1433	.0533	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section .... pounds..	78,000
Elastic limit per square inch of original section .... do...	41,000
Elongation per inch after rupture .... inch..	0.2633
Elongation per inch under strain at elastic limit .... do...	.001400
Reduction in diameter at point of rupture .... do...	.174
Reduction in area after rupture, per centum of original section	52.2
Position of rupture	¼ inch from middle of stem
Character of broken surface	silky
Elongation of inch sections	".18, ".45*, ".16

No. 2155.

Marks, $^{8\,T_{44}}_{M\,T_{1}\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000300	.000200	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
9,000	36,000	.001133	0.	....	....	
9,250	37,000	.001167	.000034	....	....	
9,500	38,000	.001233	.000066	....	....	
9,750	39,000	.001267	.000034	....	....	
10,000	40,000	.001367	.000100	.000033	.000033	
10,250	41,000	.001400	.000033	....	....	
10,500	42,000	.001400	0.	....	....	
10,750	43,000	.001433	.000033	....	....	
11,000	44,000	.001467	.000034	....	....	
11,250	45,000	.001500	.000033	.000033	.000033	
11,500	46,000	.001567	.000067	....	....	Elastic limit.
11,750	47,000	.001700	.000133	....	....	
12,000	48,000	.005000	.003300	....	....	
12,250	49,000	.007667	.002667	....	....	
12,500	50,000	.009000	.001333	....	....	
12,750	51,000	.010333	.001333	....	....	
13,000	52,000	.010933	.000600	....	....	
13,250	53,000	.011667	.000734	....	....	
13,500	54,000	.012700	.001033	....	....	
13,750	55,000	.013733	.001033	....	....	
14,000	56,000	.015167	.001434	....	....	
14,250	57,000	.016600	.001433	....	....	
14,500	58,000	.018000	.001400	....	....	
14,750	59,000	.019000	.001000	....	....	
15,000	60,000	.020400	.001400	....	....	
15,500	62,000	.023500	.003100	....	....	
16,000	64,000	.026833	.003333	....	....	
16,500	66,000	.030400	.003567	....	....	
17,000	68,000	.034500	.004100	....	....	
17,500	70,000	.039000	.005500	....	....	
18,000	72,000	.044000	.005000	....	....	
18,500	74,000	.050667	.006667	....	....	
19,000	76,000	.058833	.008166	....	....	
19,500	78,000	.070500	.011667	....	....	
20,000	80,000	.0933	.0228	....	....	
20,410	81,640	.1567	.0634	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	81,640
Elastic limit per square inch of original section	do...	46,000
Elongation per inch after rupture	inch..	0.1567
Elongation per inch under strain at elastic limit	do...	.001567
Reduction in diameter at point of rupture	do...	.064
Reduction in area after rupture, per centum of original section		21.4
Position of rupture		″.70 from neck
Character of broken surface, granular; dull spot at circumference; opened cracks in surface of stem		
Elongation of inch sections		″.20+, ″.13, ″.14

No. 2156.

Marks, $\overset{8\ T_{44}}{M\ T,\ O}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.		
2,500	10,000	.000333	.000166	0.		
3,750	15,000	.000500	.000167	0.		
5,000	20,000	.000667	.000167	0.		
6,250	25,000	.000833	.000166	0.		
7,500	30,000	.001000	.000167	0.		
8,750	35,000	.001133	.000133	0.		
9,000	36,000	.001167	.000034			
9,250	37,000	.001200	.000033			
9,500	38,000	.001233	.000033			
9,750	39,000	.001267	.000034			
10,000	40,000	.001333	.000066	0.		
10,250	41,000	.001367	.000034			
10,500	42,000	.001400	.000033			
10,750	43,000	.001433	.000033			Elastic limit.
11,000	44,000	.009000	.007567			
11,250	45,000	.010333	.001333			
11,500	46,000	.011733	.001400			
11,750	47,000	.012267	.000534			
12,000	48,000	.012900	.000633			
12,250	49,000	.014000	.001100			
12,500	50,000	.015367	.001367			
12,750	51,000	.016667	.001300			
13,000	52,000	.018167	.001500			
13,250	53,000	.019333	.001166			
13,500	54,000	.020333	.001000			
13,750	55,000	.021500	.001167			
14,000	56,000	.023000	.001500			
14,250	57,000	.024867	.001867			
14,500	58,000	.026367	.001500			
14,750	59,000	.027733	.001366			
15,000	60,000	.030000	.002267			
15,500	62,000	.034000	.004000			
16,000	64,000	.038333	.004333			
16,500	66,000	.043333	.005000			
17,000	68,000	.049167	.005834			
17,500	70,000	.056667	.007500			
18,000	72,000	.065000	.008333			
18,500	74,000	.0767	.0117			
19,000	76,000	.0967	.0200			
19,500	78,000	.1400	.0433			
19,520	78,080	.1600	.0200			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	78,080
Elastic limit per square inch of original section	do	43,000
Elongation per inch after rupture	inch	0.2433
Elongation per inch under strain at elastic limit	do	.001433
Reduction in diameter at point of rupture	do	.161
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		″.80 from neck
Character of broken surface		silky
Elongation of inch sections		″.43, ″.17, ″.13

No. 2157.

Marks, $\overset{8\ T_{44}}{M\ T_{3}\ M}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000467	.000134	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
9,000	36,000	.001167	.000034	....	....	
9,250	37,000	.001200	.000033	....	....	
9,500	38,000	.001233	.000033	....	....	
9,750	39,000	.001300	.000067	....	....	Elastic limit.
10,000	40,000	.001433	.000133	....	....	
10,250	41,000	.009867	.008434	....	....	
10,500	42,000	.011033	.001166	....	....	
10,750	43,000	.012000	.000967	....	....	
11,000	44,000	.013000	.001000	....	....	
11,250	45,000	.014000	.001000	....	....	
11,500	46,000	.015000	.001000	....	....	
11,750	47,000	.016100	.001100	....	....	
12,000	48,000	.017400	.001300	....	....	
12,250	49,000	.018600	.001200	....	....	
12,500	50,000	.019933	.001333	....	....	
13,000	52,000	.022333	.002400	....	....	
13,500	54,000	.025667	.003334	....	....	
14,000	56,000	.028667	.003000	....	....	
14,500	58,000	.032333	.003666	....	....	
15,000	60,000	.036333	.004000	....	....	
15,500	62,000	.040833	.004500	....	....	
16,000	64,000	.046333	.005500	....	....	
16,500	66,000	.054000	.007667	....	....	
17,000	68,000	.062000	.008000	....	....	
17,500	70,000	.0700	.0080	....	....	
18,000	72,000	.0833	.0133	....	....	
18,500	74,000	.1000	.0167	....	....	
19,000	76,000	.1267	.0267	....	....	
19,100	76,400	.1600	.0333	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	76,400
Elastic limit per square inch of original section ....do...	39,000
Elongation per inch after rupture ....inch..	0.1767
Elongation per inch under strain at elastic limit ....do...	.001300
Reduction in diameter at point of rupture..do...	.074
Reduction in area after rupture, per centum of original section................................	24.6

Position of rupture..".05 from middle of stem
Character of broken surface granular; dull spot at circumference; opened cracks in surface of stem
Elongation of inch sections..".13, ".26*, ".14

NEW TUBE No. 44.

No. 2723.

Marks, $\overset{8\,\text{Cn}\,\text{R}_{44}\,\text{T}}{\text{B}\,\text{T}_4\,\text{I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load
1,250	5,000	.000033	.000033	0.	....	
2,500	10,000	.000267	.000234	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000733	.000133	0.	....	
7,500	30,000	.000933	.000200	0.	....	
8,750	35,000	.001100	.000167	0.	....	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001167	.000034	....	....	
9,500	38,000	.001200	.000033	....	....	
9,750	39,000	.001233	.000033	....	....	
10,000	40,000	.001300	.000067	....	....	
10,250	41,000	.001400	.000100	....	....	Elastic limit.
10,500	42,000	.001633	.000233	....	....	
10,750	43,000	.001900	.000267	....	....	
11,000	44,000	.002233	.000333	....	....	
11,250	45,000	.005933	.003700	....	....	
11,500	46,000	.006533	.000600	....	....	
12,000	48,000	.009000	.002467	....	....	
12,500	50,000	.011267	.002267	....	....	
13,000	52,000	.013267	.002000	....	....	
13,500	54,000	.016000	.002733	....	....	
14,000	56,000	.018233	.002233	....	....	
14,500	58,000	.021267	.003034	....	....	
15,000	60,000	.024400	.003133	....	....	
15,500	62,000	.027700	.003300	....	....	
16,000	64,000	.031333	.003633	....	....	
16,500	66,000	.035500	.004167	....	....	
17,000	68,000	.0400	.0045	....	....	
17,500	70,000	.0467	.0067	....	....	
18,000	72,000	.0567	.0100	....	....	
18,500	74,000	.0633	.0066	....	....	
19,000	76,000	.0733	.0100	....	....	
19,500	78,000	.0967	.0234	....	....	
20,000	80,000	.1367	.0400	....	....	
20,250	81,000	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....pounds..	81,000
Elastic limit per square inch of original section....do...	41,000
Elongation per inch after rupture....inch..	0.2267
Elongation per inch under strain at elastic limit....do...	.001400
Reduction in diameter at point of rupture....do...	.174
Reduction in area after rupture, per centum of original section....	52.2
Position of rupture....	″.65 from neck
Character of broken surface....	silky
Elongation of inch sections....	″.12, ″.13, ″.43*

No. 2724.

Marks, $\genfrac{}{}{0pt}{}{8\ \mathrm{Cn}\ \mathrm{R}_{14}\ \mathrm{T}}{\mathrm{B}\ \mathrm{T}_5\ \mathrm{O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001200	.000267	0.	....	
9, 000	36, 000	.001233	.000033	....	....	
9, 250	37, 000	.001267	.000034	....	....	
9, 500	38, 000	.001300	.000033	....	....	
9, 750	39, 000	.001300	0.	....	....	
10, 000	40, 000	.001333	.000033	....	....	
10, 250	41, 000	.001367	.000034	....	....	Elastic limit.
10, 500	42, 000	.001667	.000300	....	....	
10, 750	43, 000	.001800	.000133	....	....	
11, 000	44, 000	.001900	.000100	....	....	
11, 250	45, 000	.003067	.001167	....	....	
11, 500	46, 000	.004000	.000933	....	....	
12, 000	48, 000	.007067	.003067	....	....	
12, 500	50, 000	.009367	.002300	....	....	
13, 000	52, 000	.011567	.002200	....	....	
13, 500	54, 000	.013667	.002100	....	....	
14, 000	56, 000	.015667	.002000	....	....	
14, 500	58, 000	.018433	.002766	....	....	
15, 000	60, 000	.020833	.002400	....	....	
15, 500	62, 000	.023733	.002900	....	....	
16, 000	64, 000	.027233	.003500	....	....	
16, 500	66, 000	.030167	.002934	....	....	
17, 000	68, 000	.034500	.004333	....	....	
17, 500	70, 000	.0367	.0022	....	....	
18, 000	72, 000	.0400	.0033	....	....	
18, 500	74, 000	.0500	.0100	....	....	
19, 000	76, 000	.0600	.0100	....	....	
19, 500	78, 000	.0700	.0100	....	....	
20, 000	80, 000	.0900	.0200	....	....	
20, 500	82, 000	.1367	.0467	....	....	
20, 750	83, 000	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	83, 000
Elastic limit per square inch of original section	do...	41, 000
Elongation per inch after rupture	inch..	0. 2233
Elongation per inch under strain at elastic limit	do...	.001367
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		1″.25 from neck
Character of broken surface		silky
Elongation of inch sections		″.10, ″.28, ″.29⁴

No. 2725.

Marks, $\genfrac{}{}{0pt}{}{8\ \mathrm{Cn}\ \mathrm{R}_{14}\ \mathrm{T}}{\mathrm{B}\ \mathrm{T}_{6}\ \mathrm{M}}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000400	.000133	0.	....	
5, 000	20, 000	.000600	.000200	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001100	.000167	0.	....	
9, 000	36, 000	.001233	.000133	....	....	
9, 250	37, 000	.001267	.000034	....	....	
9, 500	38, 000	.001267	0.	....	....	
9, 750	39, 000	.001333	.000066	....	....	
10, 000	40, 000	.001367	.000034	....	....	
10, 250	41, 000	.001400	.000033	....	....	Elastic limit.
10, 500	42, 000	.007233	.005833	....	....	
10, 750	43, 000	.008033	.000800	....	....	
11, 000	44, 000	.009033	.001000	....	....	
11, 500	46, 000	.011133	.002100	....	....	
12, 000	48, 000	.013667	.002534	....	....	
12, 500	50, 000	.016133	.002466	....	....	
13, 000	52, 000	.018667	.002534	....	....	
13, 500	54, 000	.021867	.003200	....	....	
14, 000	56, 000	.025000	.003133	....	....	
14, 500	58, 000	.028400	.003400	....	....	
15, 000	60, 000	.033167	.004767	....	....	
15, 500	62, 000	.036667	.003500	....	....	
16, 000	64, 000	.040000	.003333	....	....	
16, 500	66, 000	.0467	.0067	....	....	
17, 000	68, 000	.0600	.0133	....	....	
17, 500	70, 000	.0667	.0067	....	....	
18, 000	72, 000	.0800	.0133	....	....	
18, 500	74, 000	.1000	.0200	....	....	
19, 000	76, 000	.1333	.0333	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76, 000
Elastic limit per square inch of original section	do...	41, 000
Elongation per inch after rupture	inch..	0. 2567
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section		52. 2
Position of rupture		1″.23 from neck; oblique
Character of broken surface		silky
Elongation of inch sections		″.14, ″.31*, ″.32

No. 2726.

Marks, $\substack{8\ \mathrm{Cn}\ \mathrm{R_{44}}\ \mathrm{T} \\ \mathrm{M}\ \mathrm{T_4}\ \mathrm{I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000400	.000133	0.	....	
5,000	20,000	.000533	.000133	0.	....	
6,250	25,000	.000733	.000200	0.	....	
7,500	30,000	.000900	.000167	0.	....	
8,750	35,000	.001067	.000167	0.	....	
9,000	36,000	.001133	.000066	....	....	
9,250	37,000	.001200	.000067	....	....	
9,500	38,000	.001233	.000033	....	....	
9,750	39,000	.001267	.000034	....	....	
10,000	40,000	.001300	.000033	....	....	
10,250	41,000	.001367	.000067	....	....	
10,500	42,000	.001433	.000066	....	....	Elastic limit.
10,750	43,000	.003167	.001734	....	....	
11,000	44,000	.005167	.002000	....	....	
11,250	45,000	.006167	.001000	....	....	
11,500	46,000	.007067	.000900	....	....	
12,000	48,000	.009500	.002433	....	....	
12,500	50,000	.011733	.002233	....	....	
13,000	52,000	.013900	.002167	....	....	
13,500	54,000	.016133	.002233	....	....	
14,000	56,000	.019000	.002867	....	....	
14,500	58,000	.021633	.002633	....	....	
15,000	60,000	.024667	.003034	....	....	
15,500	62,000	.028700	.004033	....	....	
16,000	64,000	.031367	.002667	....	....	
16,500	66,000	.035833	.004466	....	....	
17,000	68,000	.038333	.002500	....	....	
17,500	70,000	.0433	.004967	....	....	
18,000	72,000	.0567	.0134	....	....	
18,500	74,000	.0633	.0066	....	....	
19,000	76,000	.0733	.0100	....	....	
19,500	78,000	.1000	.0267	....	....	
20,000	80,000	.1567	.0567	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	80,000
Elastic limit per square inch of original section	do	42,000
Elongation per inch after rupture	inch	0.2100
Elongation per inch under strain at elastic limit	do	.001433
Reduction in diameter at point of rupture	do	.104
Reduction in area after rupture, per centum of original section		33.5
Position of rupture		″.80 from neck
Character of broken surface		granular; with flaky streak
Elongation of inch sections		″.29*, ″.19, ″.15

No. 2727.

Marks, $^{8\,\mathrm{Cn}\,\mathrm{R}_4\,\mathrm{T}}_{\mathrm{M}\,\mathrm{T}_8\,\mathrm{O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000400	.000133	0.	....	
5, 000	20, 000	.000567	.000167	0.	....	
6, 250	25, 000	.000733	.000166	0.	....	
7, 500	30, 000	.000900	.000167	0.	....	
8, 750	35, 000	.001067	.000167	....	....	
9, 000	36, 000	.001100	.000033	....	....	
9, 250	37, 000	.001133	.000033	....	....	
9, 500	38, 000	.001200	.000067	....	....	
9, 750	39, 000	.001233	.000033	....	....	
10, 000	40, 000	.001267	.000034	....	....	
10, 250	41, 000	.001333	.000066	....	....	
10, 500	42, 000	.001367	.000034	....	....	
10, 750	43, 000	.001400	.000033	....	....	Elastic limit.
11, 000	44, 000	.001600	.000200	....	....	
11, 250	45, 000	.003033	.001433	....	....	
11, 500	46, 000	.004700	.001667	....	....	
12, 000	48, 000	.007133	.002433	....	....	
12, 500	50, 000	.009333	.002200	....	....	
13, 000	52, 000	.011567	.002634	....	....	
13, 500	54, 000	.013767	.002200	....	....	
14, 000	56, 000	.015933	.002166	....	....	
14, 500	58, 000	.018533	.002600	....	....	
15, 000	60, 000	.021167	.002634	....	....	
15, 500	62, 000	.024433	.003266	....	....	
16, 000	64, 000	.027467	.003034	....	....	
16, 500	66, 000	.031333	.003866	....	....	
17, 000	68, 000	.035233	.003900	....	....	
17, 500	70, 000	.0367	.001467	....	....	
18, 000	72, 000	.0433	.0066	....	....	
18, 500	74, 000	.0533	.0100	....	....	
19, 000	76, 000	.0633	.0100	....	....	
19, 500	78, 000	.0767	.0134	....	....	
20, 000	80, 000	.0967	.0200	....	....	
20, 250	81, 000	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	81, 000
Elastic limit per square inch of original section	do...	43, 000
Elongation per inch after rupture	inch..	0. 1433
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.054
Reduction in area after rupture, per centum of original section		18. 3
Position of rupture		1 inch from neck
Character of broken surface		granular; flaky streak
Elongation of inch sections		″.11, ″.14, ″.18*

No. 2728.

Marks, $^{8\,\mathrm{Cn}\,\mathrm{R}_{44}\,\mathrm{T}}_{\mathrm{M}\,\mathrm{T}_{6}\,\mathrm{M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

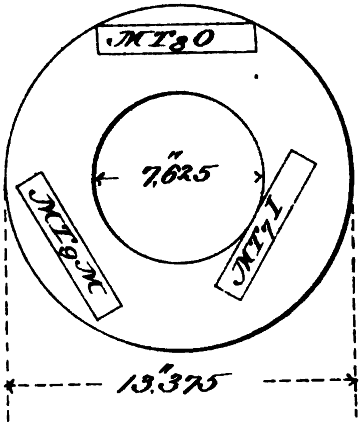
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000833	.000166	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001167	.000167	0.	....	
9,000	36,000	.001200	.000033	....	....	
9,250	37,000	.001233	.000033	....	....	
9,500	38,000	.001300	.000067	....	....	
9,750	39,000	.001367	.000067	....	....	
10,000	40,000	.001400	.000033	....	....	
10,250	41,000	.001467	.000067	....	....	Elastic limit.
10,500	42,000	.001667	.000200	....	....	
10,750	43,000	.004333	.002666	....	....	
11,000	44,000	.005267	.000934	....	....	
11,500	46,000	.007533	.002266	....	....	
12,000	48,000	.009567	.002034	....	....	
12,500	50,000	.012067	.002500	....	....	
13,000	52,000	.013900	.001833	....	....	
13,500	54,000	.016333	.002433	....	....	
14,000	56,000	.018667	.002334	....	....	
14,500	58,000	.021567	.002900	....	....	
15,000	60,000	.024600	.003033	....	....	
15,500	62,000	.027633	.003033	....	....	
16,000	64,000	.031333	.003700	....	....	
16,500	66,000	.035400	.004067	....	....	
17,000	68,000	.038333	.002933	....	....	
17,500	70,000	.0433	.004967	....	....	
18,000	72,000	.0533	.0100	....	....	
18,500	74,000	.0633	.0100	....	....	
19,000	76,000	.0700	.0067	....	....	
19,500	78,000	.0933	.0233	....	....	
20,000	80,000	.1267	.0334	....	....	
20,300	81,200	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	81,200
Elastic limit per square inch of original section	do	41,000
Elongation per inch after rupture	inch	0.2333
Elongation per inch under strain at elastic limit	do	.001467
Reduction in diameter at point of rupture	do	.154
Reduction in area after rupture, per centum of original section		47.2
Position of rupture		1″.28 from neck
Character of broken surface		silky
Elongation of inch sections		″.25, ″.30*, ″.15

New Tube No. 44 8" converted Rifle

Additional specimens



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No. 2768.

Marks, $^{8\,\mathrm{Cn}\,\mathrm{R}_{14}\,\mathrm{T}}_{\mathrm{M}\,\mathrm{T}_7\,\mathrm{I}}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000300	.000133	0.	....	
3,750	15,000	.000500	.000200	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000800	.000133	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001167	.000200	....	....	
9,000	36,000	.001200	.000033	....	....	
9,250	37,000	.001233	.000033	....	....	
9,500	38,000	.001267	.000034	....	....	
9,750	39,000	.001333	.000066	....	....	
10,000	40,000	.001367	.000034	....	....	
10,250	41,000	.001400	.000033	....	....	
10,500	42,000	.001500	.000100	....	....	Elastic limit.
10,750	43,000	.001833	.000333	....	....	
11,000	44,000	.004500	.002667	....	....	
11,250	45,000	.007000	.002500	....	....	
11,500	46,000	.007600	.000600	....	....	
11,750	47,000	.008200	.000600	....	....	
12,000	48,000	.009367	.001167	....	....	
12,250	49,000	.010333	.000966	....	....	
12,500	50,000	.011533	.001200	....	....	
13,000	52,000	.013567	.002034	....	....	
13,500	54,000	.016033	.002466	....	....	
14,000	56,000	.018667	.002634	....	....	
14,500	58,000	.021167	.002500	....	....	
15,000	60,000	.024033	.002866	....	....	
15,500	62,000	.027233	.003200	....	....	
16,000	64,000	.031000	.003767	....	....	
16,500	66,000	.036167	.005167	....	....	
17,000	68,000	.040833	.004666	....	....	
17,500	70,000	.0467	.005867	....	....	
18,000	72,000	.0533	.0066	....	....	
18,500	74,000	.0633	.0100	....	....	
19,000	76,000	.0700	.0067	....	....	
19,500	78,000	.0900	.0200	....	....	
20,000	80,000	.1267	.0367	....	....	
20,020	80,080	.1333	.0066	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	80,080
Elastic limit per square inch of original section ....do...	42,000
Elongation per inch after rupture..................................inch..	0.1567
Elongation per inch under strain at elastic limit ....do...	.001500
Reduction in diameter at point of rupture ....do...	.064
Reduction in area after rupture, per centum of original section	21.4
Position of rupture..................................	"33 from neck
Character of broken surface..................granular; radiating from a flaky spot at circumference	
Elongation of inch sections..................................	"13, ".13, ".21*

No. 2769.

Marks, $^{8}\genfrac{}{}{0pt}{}{\text{C. R}_{44}\text{ T}}{\text{M T. O}}$
Diameter ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000467	.000134	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	....	....	
9, 000	36, 000	.001167	.000034	....	....	
9, 250	37, 000	.001200	.000033	....	....	
9, 500	38, 000	.001233	.000033	....	....	
9, 750	39, 000	.001300	.000067	....	....	
10, 000	40, 000	.001333	.000033	....	....	
10, 250	41, 000	.001367	.000034	....	....	
10, 500	42, 000	.001400	.000033	....	....	
10, 750	43, 000	.001467	.000067	....	....	
11, 000	44, 000	.001567	.000100	....	....	Elastic limit.
11, 250	45, 000	.001767	.000200	....	....	
11, 500	46, 000	.004667	.002900	....	....	
11, 750	47, 000	.006167	.001500	....	....	
12, 000	48, 000	.007000	.000833	....	....	
12, 250	49, 000	.008167	.001167	....	....	
12, 500	50, 000	.009533	.001366	....	....	
13, 000	52, 000	.011333	.001800	....	....	
13, 500	54, 000	.013600	.002267	....	....	
14, 000	56, 000	.016000	.002400	....	....	
14, 500	58, 000	.018667	.002667	....	....	
15, 000	60, 000	.021167	.002500	....	....	
15, 500	62, 000	.024167	.003000	....	....	
16, 000	64, 000	.027167	.003000	....	....	
16, 500	66, 000	.030667	.003500	....	....	
17, 000	68, 000	.034067	.004000	....	....	
17, 500	70, 000	.039000	.004333	....	....	
18, 000	72, 000	.0467	.0077	....	....	
18, 500	74, 000	.0533	.0066	....	....	
19, 000	76, 000	.0600	.0067	....	....	
19, 500	78, 000	.0700	.0100	....	....	
20, 000	80, 000	.0933	.0233	....	....	
20, 500	82, 000	.1333	.0400	....	....	Tensile strength.

General summary.

Tensile strength, per square inch of original section	pounds..	82, 000
Elastic limit per square inch of original section	do...	44, 000
Elongation per inch after rupture	inch..	0. 2033
Elongation per inch under strain at elastic limit	do...	.001567
Reduction in diameter at point of rupture	do...	.094
Reduction in area after rupture, per centum of original section		30. 6
Position of rupture		″.65 from neck; oblique
Character of broken surface		silky
Elongation of inch sections		″.13, ″.18, ″.30

No. 2770.

Marks, $^{8\ \mathrm{C.\ R_{44}\ T}}_{\mathrm{M\ T.\ M}}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000200	.000200	0.	....	
2,500	10,000	.000367	.000167	0.	....	
3,750	15,000	.000533	.000166	0.	....	
5,000	20,000	.000700	.000167	0.	....	
6,250	25,000	.000867	.000167	0.	....	
7,500	30,000	.001033	.000166	0.	....	
8,750	35,000	.001200	.000167	....	....	
9,000	36,000	.001233	.000033	....	....	
9,250	37,000	.001267	.000034	....	....	
9,500	38,000	.001333	.000066	....	....	
9,750	39,000	.001367	.000034	....	....	
10,000	40,000	.001433	.000066	....	....	
10,250	41,000	.001467	.000034	....	....	
10,500	42,000	.001533	.000066	....	....	Elastic limit.
10,750	43,000	.001700	.000167	....	....	
11,000	44,000	.005500	.003800	....	....	
11,250	45,000	.006067	.000567	....	....	
11,500	46,000	.007100	.001033	....	....	
11,750	47,000	.008067	.000967	....	....	
12,000	48,000	.009167	.001100	....	....	
12,250	49,000	.010033	.000866	....	....	
12,500	50,000	.011200	.001167	....	....	
13,000	52,000	.013500	.002300	....	....	
13,500	54,000	.015667	.002167	....	....	
14,000	56,000	.018167	.002500	....	....	
14,500	58,000	.021000	.002833	....	....	
15,000	60,000	.023500	.002500	....	....	
15,500	62,000	.026667	.003167	....	....	
16,000	64,000	.029667	.003000	....	....	
16,500	66,000	.033333	.003666	....	....	
17,000	68,000	.037667	.004334	....	....	
17,500	70,000	.0400	.002333	....	....	
18,000	72,000	.0467	.0067	....	....	
18,500	74,000	.0567	.0100	....	....	
19,000	76,000	.0667	.0100	....	....	
19,500	78,000	.0800	.0133	....	....	
20,000	80,000	.1067	.0267	....	....	
20,160	80,640	.1400	.0333	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80,640
Elastic limit per square inch of original section	do....	42,000
Elongation per inch after rupture	inch..	0.2167
Elongation per inch under strain at elastic limit	do...	.001533
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		1″.35 from neck
Character of broken surface		silky
Elongation of inch sections		″.11, ″.30, ″.24

No. 2104.

Marks, $\overset{8\,T}{B\,T_1}\,I$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000383	.000166	0.	....	
3, 750	15, 000	.000467	.000134	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.001000	.000200	0.	....	
8, 750	35, 000	.001133	.000133	0.	....	
10, 000	40, 000	.001367	.000234	.000067	.000067	Elastic limit.
10, 250	41, 000	.001500	.000133	....	....	
10, 500	42, 000	.004733	.003233	....	....	
10, 750	43, 000	.006767	.002034	....	....	
11, 000	44, 000	.007700	.000933	....	....	
11, 250	45, 000	.009000	.001300	....	....	
11, 500	46, 000	.010133	.001133	....	....	
11, 750	47, 000	.011167	.001034	....	....	
12, 000	48, 000	.012500	.001333	....	....	
12, 250	49, 000	.013667	.001167	....	....	
12, 500	50, 000	.015067	.001400	....	....	
12, 750	51, 000	.016333	.001266	....	....	
13, 000	52, 000	.017833	.001500	....	....	
13, 250	53, 000	.019200	.001367	....	....	
13, 500	54, 000	.020700	.001500	....	....	
13, 750	55, 000	.022333	.001633	....	....	
14, 000	56, 000	.024333	.002000	....	....	
14, 250	57, 000	.025667	.001334	....	....	
14, 500	58, 000	.028067	.002400	....	....	
14, 750	50, 000	.030167	.002100	....	....	
15, 000	60, 000	.032500	.002333	....	....	
15, 500	62, 000	.036900	.004400	....	....	
16, 000	64, 000	.042333	.005433	....	....	
16, 500	66, 000	.048333	.006000	....	....	
17, 000	68, 000	.057667	.009334	....	....	
17, 500	70, 000	.070000	.012333	....	....	
18, 000	72, 000	.0900	.0200	....	....	
18, 500	74, 000	.1300	.0400	....	....	
18, 510	74, 040	.1667	.0367	....	....	Tensile strength.

General summary.

Specific gravity		7.8583
Hardness		12.42
Tensile strength per square inch of original section	pounds..	74, 040
Elastic limit per square inch of original section	do...	40, 000
Elongation per inch after rupture	inch..	0.2700
Elongation per inch under strain at elastic limit	do...	.001367
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44.6
Position of rupture		″.60 from middle of stem
Character of broken surface		silky; cracks opened in surface of stem
Elongation of inch sections		″.38*, ″.28, ″.17

No. 2105.

Marks, $\overset{8\ T_{46}}{B\ T_{2}\ O}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000833	.000166	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001200	.000200	0.	....	
9,000	36,000	.001233	.000033	....	....	
9,250	37,000	.001267	.000034	....	....	
9,500	38,000	.001300	.000033	....	....	
9,750	39,000	.001333	.000033	....	....	
10,000	40,000	.001367	.000034	.000067	.000067	
10,250	41,000	.001400	.000033	....	....	Elastic limit.
10,500	42,000	.001567	.000167	....	....	
10,750	43,000	.001800	.000233	....	....	
11,000	44,000	.003000	.001200	....	....	
11,250	45,000	.005267	.002267	....	....	
11,500	46,000	.007333	.002066	....	....	
11,750	47,000	.008467	.001134	....	....	
12,000	48,000	.009667	.001200	....	....	
12,250	49,000	.010833	.000666	....	....	
12,500	50,000	.011333	.001000	....	....	
12,750	51,000	.012667	.001334	....	....	
13,000	52,000	.013767	.001100	....	....	
13,250	53,000	.014900	.001133	....	....	
13,500	54,000	.016533	.001633	....	....	
13,750	55,000	.018100	.001567	....	....	
14,000	56,000	.019500	.001400	....	....	
14,250	57,000	.020733	.001233	....	....	
14,500	58,000	.022700	.001967	....	....	
14,750	59,000	.024000	.001300	....	....	
15,000	60,000	.025667	.001667	....	....	
15,500	62,000	.030000	.004333	....	....	
16,000	64,000	.034667	.004667	....	....	
16,500	66,000	.039500	.004833	....	....	
17,000	68,000	.045333	.005833	....	....	
17,500	70,000	.053000	.007667	....	....	
18,000	72,000	.063167	.010167	....	....	
18,500	74,000	.078000	.014833	....	....	
19,000	76,000	.1133	.0353	....	....	
19,120	76,480	.1533	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 76,480
Elastic limit per square inch of original section....................do... 41,000
Elongation per inch after rupture....................inch.. 0.2433
Elongation per inch under strain at elastic limit....................do... .001400
Reduction in diameter at point of rupture ....do... .154
Reduction in area after rupture, per centum of original section.................... 47.2
Position of rupture ....".10 from middle of stem
Character of broken surface ....silky; cracks opened in surface of stem
Elongation of inch sections....................".15, ".43', ".15

No. 2106.

Marks, $^{8\,T_4}_{B\,T_3\,M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
9,000	36,000	.001200	.000067	....	....	
9,250	37,000	.001233	.000033	....	....	
9,500	38,000	.001267	.000034	....	....	
9,750	39,000	.001300	.000033	....	....	Elastic limit.
10,000	40,000	.001700	.000400	....	....	
10,250	41,000	.006900	.005200	....	....	
10,500	42,000	.008167	.001267	....	....	
10,750	43,000	.009500	.001333	....	....	
11,000	44,000	.010500	.001000	....	....	
11,250	45,000	.012067	.001567	....	....	
11,500	46,000	.013033	.000966	....	....	
11,750	47,000	.014133	.001100	....	....	
12,000	48,000	.015433	.001300	....	....	
12,250	49,000	.016833	.001400	....	....	
12,500	50,000	.018400	.001567	....	....	
12,750	51,000	.019833	.001433	....	....	
13,000	52,000	.021367	.001534	....	....	
13,250	53,000	.022833	.001466	....	....	
13,500	54,000	.024700	.001867	....	....	
13,750	55,000	.026333	.001633	....	....	
14,000	56,000	.028533	.002200	....	....	
14,250	57,000	.030167	.001634	....	....	
14,500	58,000	.032500	.002333	....	....	
14,750	59,000	.034733	.002233	....	....	
15,000	60,000	.037400	.002667	....	....	
15,500	62,000	.043667	.006267	....	....	
16,000	64,000	.050067	.007000	....	....	
16,500	66,000	.058833	.008166	....	....	
17,000	68,000	.070000	.011167	....	....	
17,500	70,000	.0933	.0233	....	....	
18,000	72,000	.1300	.0367	....	....	
18,090	72,360	.1700	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 72,360
Elastic limit per square inch of original section ....do... 39,000
Elongation per inch after rupture ....inch.. 0.2667
Elongation per inch under strain at elastic limit ....do... .001300
Reduction in diameter at point of rupture..do... .164
Reduction in area after rupture, per centum of original section.................................. 49.7
Position of rupture ....½ inch from middle of stem
Character of broken surface....................................silky; cracks opened in surface of stem
Elongation of inch sections ....″.22, ″.42*, ″.16

No. 2107.

Marks, $\overset{8}{\mathrm{M}}\,\overset{\mathrm{T}_{46}}{\mathrm{T}_1}\,\mathrm{I}$
Diameter, ".565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000500	.000200	0.	....	
5,000	20,000	.000700	.000200	.000033	.000033	
6,250	25,000	.000833	.000133	.000067	.000034	
7,500	30,000	.001033	.000200	.000067	0.	
8,750	35,000	.001133	.000100	.000067	0.	
9,000	36,000	.001167	.000034	....	....	
9,250	37,000	.001200	.000033	....	....	
9,500	38,000	.001233	.000033	....	....	
9,750	39,000	.001300	.000067	....	....	
10,000	40,000	.001333	.000033	.000067	0.	
10,250	41,000	.001367	.000034	....	....	
10,500	42,000	.001400	.000033	....	....	
10,750	43,000	.001467	.000067	....	....	Elastic limit.
11,000	44,000	.001700	.000233	....	....	
11,250	45,000	.004100	.002400	....	....	
11,500	46,000	.006667	.002567	....	....	
11,750	47,000	.008000	.001333	....	....	
12,000	48,000	.009067	.001067	....	....	
12,250	49,000	.009733	.000666	....	....	
12,500	50,000	.010800	.001067	....	....	
12,750	51,000	.011800	.001000	....	....	
13,000	52,000	.013133	.001333	....	....	
13,250	53,000	.014267	.001134	....	....	
13,500	54,000	.015733	.001466	....	....	
13,750	55,000	.016700	.000967	....	....	
14,000	56,000	.018000	.001300	....	....	
14,250	57,000	.019500	.001500	....	....	
14,500	58,000	.020400	.000900	....	....	
14,750	59,000	.021767	.001367	....	....	
15,000	60,000	.023733	.001966	....	....	
15,500	62,000	.027067	.003334	....	....	
16,000	64,000	.030667	.003600	....	....	
16,500	66,000	.034700	.004033	....	....	
17,000	68,000	.039333	.004633	....	....	
17,500	70,000	.045000	.005667	....	....	
18,000	72,000	.051067	.006667	....	....	
18,500	74,000	.059000	.007333	....	....	
19,000	76,000	.0700	.0110	....	....	
19,500	78,000	.0933	.0233	....	....	
20,000	80,000	.1300	.0367	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80,000
Elastic limit per square inch of original section	do...	43,000
Elongation per inch after rupture	inch..	0.2233
Elongation per inch under strain at elastic limit	do...	.001467
Reduction in diameter at point of rupture	do...	.135
Reduction in area after rupture, per centum of original section		41.9
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		".18, ".36,* ".13

No. 2108.

Marks, $\overset{8}{\text{M}}\,\overset{\text{T}_4}{\text{T}_3}\,\text{O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000333	.000200	0.	....	
3,750	15,000	.000433	.000100	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	0.	....	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001167	.000034	....	....	
9,500	38,000	.001200	.000033	....	....	
9,750	39,000	.001333	.000133	....	....	
10,000	40,000	.001367	.000034	.000100	.000100	Elastic limit.
10,250	41,000	.004267	.002900	....	....	
10,500	42,000	.006500	.002233	....	....	
10,750	43,000	.008167	.001667	....	....	
11,000	44,000	.009667	.001500	....	....	
11,250	45,000	.010500	.000833	....	....	
11,500	46,000	.011500	.001000	....	....	
11,750	47,000	.012667	.001167	....	....	
12,000	48,000	.013767	.001100	....	....	
12,250	49,000	.014833	.001066	....	....	
12,500	50,000	.016333	.001500	....	....	
12,750	51,000	.017500	.001167	....	....	
13,000	52,000	.019000	.001500	....	....	
13,250	53,000	.020000	.001000	....	....	
13,500	54,000	.021500	.001500	....	....	
13,750	55,000	.022833	.001333	....	....	
14,000	56,000	.024667	.001834	....	....	
14,250	57,000	.026333	.001666	....	....	
14,500	58,000	.028200	.001867	....	....	
14,750	59,000	.029833	.001633	....	....	
15,000	60,000	.031867	.002034	....	....	
15,500	62,000	.036000	.004133	....	....	
16,000	64,000	.041667	.005667	....	....	
16,500	66,000	.047333	.005666	....	....	
17,000	68,000	.054167	.006834	....	....	
17,500	70,000	.063333	.009166	....	....	
18,000	72,000	.0767	.013367	....	....	
18,500	74,000	.0967	.0200	....	....	
18,970	75,880	.1533	.0566	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	75,880
Elastic limit per square inch of original section	do...	40,000
Elongation per inch after rupture	inch..	0.2233
Elongation per inch under strain at elastic limit	do...	.001367
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		″.90 from neck
Character of broken surface		silky
Elongation of inch sections		″.39*, ″.16, ″.12

No. 2109.

Marks, $\overset{8\ T_{u}}{M\ T,\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000433	.000133	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001133	.000200	.000067	.000067	Elastic limit.
9,000	36,000	.001367 .004800	.000234 .003433	....	....	
9,250	37,000	.007067	.002267	....	....	
9,500	38,000	.008100	.001033	....	....	
9,750	39,000	.009000	.000900	....	....	
10,000	40,000	.010233	.001233	....	....	
10,250	41,000	.011000	.000767	....	....	
10,500	42,000	.012267	.001267	....	....	
10,750	43,000	.013500	.001233	....	....	
11,000	44,000	.014667	.001167	....	....	
11,250	45,000	.015667	.001000	....	....	
11,500	46,000	.017167	.001500	....	....	
11,750	47,000	.018333	.001166	....	....	
12,000	48,000	.019767	.001434	....	....	
12,250	49,000	.021000	.001233	....	....	
12,500	50,000	.022667	.001667	....	....	
12,750	51,000	.024033	.001366	....	....	
13,000	52,000	.026000	.001967	....	....	
13,250	53,000	.027333	.001333	....	....	
13,500	54,000	.029500	.002167	....	....	
13,750	55,000	.031167	.001667	....	....	
14,000	56,000	.033700	.002533	....	....	
14,250	57,000	.035500	.001800	....	....	
14,500	58,000	.038400	.002900	....	....	
14,750	59,000	.040700	.002300	....	....	
15,000	60,000	.043067	.002367	....	....	
15,500	62,000	.050000	.006933	....	....	
16,000	64,000	.057333	.007333	....	....	
16,500	66,000	.0667	.009367	....	....	
17,000	68,000	.0800	.0133	....	....	
17,500	70,000	.1000	.0200	....	....	
18,000	72,000	.1267	.0267	....	....	
18,210	72,840	.1800	.0533	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	72,840
Elastic limit per square inch of original section	do...	35,000
Elongation per inch after rupture	inch..	0.2467
Elongation per inch under strain at elastic limit	do...	.001133
Reduction in diameter at point of rupture	do...	.104
Reduction in area after rupture, per centum of original section		83.5
Position of rupture		¾ inch from middle of stem
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		″.34*, ″.22, ″.16

No. 2110.

Marks, $^{8\,T_{44}}_{B\,T_1\,I}$.
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000833	.000166	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001167	.000167	0.	....	
9,000	36,000	.001200	.000033	....	....	
9,250	37,000	.001233	.000033	....	....	
9,750	39,000	.001267	.000034	....	....	
10,000	40,000	.001333	.000066	.000033	.000033	
10,250	41,000	.001367	.000034	....	....	
10,500	42,000	.001400	.000033	....	....	
10,750	43,000	.001400	0.	....	....	
11,000	44,000	.001433	.000033	....	....	Elastic limit.
11,250	45,000	.004000	.002567	....	....	
11,500	46,000	.007333	.003333	....	....	
11,750	47,000	.009167	.001834	....	....	
12,000	48,000	.010267	.001100	....	....	
12,250	49,000	.011000	.000733	....	....	
12,500	50,000	.012367	.001367	....	....	
12,750	51,000	.013667	.001300	....	....	
13,000	52,000	.015000	.001333	....	....	
13,250	53,000	.016400	.001400	....	....	
13,500	54,000	.017833	.001433	....	....	
13,750	55,000	.019333	.001500	....	....	
14,000	56,000	.020833	.001500	....	....	
14,250	57,000	.022167	.001334	....	....	
14,500	58,000	.024333	.002166	....	....	
14,750	59,000	.026033	.001700	....	....	
15,000	60,000	.028200	.002167	....	....	
15,500	62,000	.032333	.004133	....	....	
16,000	64,000	.037167	.004834	....	....	
16,500	66,000	.044000	.006833	....	....	
17,000	68,000	.050000	.006000	....	....	
17,500	70,000	.058833	.008833	....	....	
18,000	72,000	.0700	.011167	....	....	
18,500	74,000	.0967	.0267	....	....	
18,920	75,680	.1600	.0633	....	....	Tensile strength.

General summary.

Specific gravity	7.8632
Hardness	12.14
Tensile strength per square inch of original section .... pounds..	75,680
Elastic limit per square inch of original section .... do...	44,000
Elongation per inch after rupture .... inch..	0.2467
Elongation per inch under strain at elastic limit .... do...	.001433
Reduction in diameter at point of rupture .... do...	.194
Reduction in area after rupture, per centum of original section	57.0
Position of rupture	¾ inch from neck
Character of broken surface	silky
Elongation of inch sections	″.44*, ″.16 ″.14

No. 2111.

Marks, $^{8\,T_{46}}_{B\,T_{2}\,O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	. 000167	. 000167	0.	....	
2, 500	10, 000	. 000300	. 000133	0.	....	
3, 750	15, 000	. 000167	. 000167	0.	....	
5, 000	20, 000	. 000567	. 000100	0.	....	
6, 250	25, 000	. 000733	. 000166	0.	....	
7, 500	30, 000	. 000900	. 000167	0.	....	
8, 750	35, 000	. 001067	. 000167	0.	....	
9, 000	36, 000	. 001133	. 000066	....	....	
9, 250	37, 000	. 001167	. 000034	....	....	
9, 500	38, 000	. 001200	. 000033	....	....	
9. 750	39, 000	. 001233	. 000033	....	....	
10, 000	40, 000	. 001367	. 000134	. 000067	. 000067	Elastic limit.
10, 250	41, 000	. 005333	. 003966	....	....	
10. 500	42, 000	. 007333	. 002000	....	....	
10, 750	43, 000	. 008000	. 000667	....	....	
11, 000	44, 000	. 009000	. 001000	....	....	
11. 250	45, 000	. 010000	. 001000	....	....	
11, 500	46, 000	. 011233	. 001233	....	....	
11, 750	47, 000	. 012833	. 001600	....	....	
12, 000	48, 000	. 013733	. 000900	....	....	
12, 250	49, 000	. 015000	. 001267	....	....	
12, 500	50, 000	. 016167	. 001167	....	....	
12, 750	51, 000	. 017867	. 001700	....	....	
13, 000	52, 000	. 018667	. 000800	....	....	
13, 250	53, 000	. 020233	. 001566	....	....	
13, 500	54, 000	. 021667	. 001434	....	....	
13, 750	55, 000	. 023000	. 001333	....	....	
14, 000	56, 000	. 024667	. 001667	....	....	
14, 250	57, 000	. 027333	. 002666	....	....	
14, 500	58, 000	. 029500	. 002167	....	....	
14, 750	59, 000	. 031167	. 001667	....	....	
15, 000	60, 000	. 033167	. 002000	....	....	
15, 500	62, 000	. 037667	. 004500	....	....	
16, 000	64, 000	. 043167	. 005500	....	....	
16, 500	66, 000	. 050000	. 006833	....	....	
17, 000	68, 000	. 059000	. 009000	....	....	
17, 500	70, 000	. 070667	. 011667	....	....	
18, 000	72, 000	. 0967	. 026033	....	....	
18, 500	74, 000	. 1300	. 0333	....	....	
18, 690	74, 760	. 1633	. 0333	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	74, 760
Elastic limit per square inch of original section..........do. .	40, 000
Elongation per inch after rupture..........inch..	0. 2567
Elongation per inch under strain at elastic limit..........do...	. 001367
Reduction in diameter at point of rupture..........do...	. 174
Reduction in area after rupture, per centum of original section..........	52. 2
Position of rupture..........	″.45 from middle of stem
Character of broken surface..........	silky
Elongation of inch sections..........	″.21, ″.42*, ″.14

No. 2110.

Marks, $^{8\,T_{44}}_{B\,T_1\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000833	.000166	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001167	.000167	0.	....	
9,000	36,000	.001200	.000033	....	....	
9,250	37,000	.001233	.000033	....	....	
9,750	39,000	.001267	.000034	....	....	
10,000	40,000	.001333	.000066	.000033	.000033	
10,250	41,000	.001367	.000034	....	....	
10,500	42,000	.001400	.000033	....	....	
10,750	43,000	.001400	0.	....	....	
11,000	44,000	.001433	.000033	....	....	Elastic limit.
11,250	45,000	.004000	.002567	....	....	
11,500	46,000	.007333	.003333	....	....	
11,750	47,000	.009167	.001834	....	....	
12,000	48,000	.010267	.001100	....	....	
12,250	49,000	.011000	.000733	....	....	
12,500	50,000	.012367	.001367	....	....	
12,750	51,000	.013667	.001300	....	....	
13,000	52,000	.015000	.001333	....	....	
13,250	53,000	.016400	.001400	....	....	
13,500	54,000	.017833	.001433	....	....	
13,750	55,000	.019333	.001500	....	....	
14,000	56,000	.020833	.001500	....	....	
14,250	57,000	.022167	.001334	....	....	
14,500	58,000	.024333	.002166	....	....	
14,750	59,000	.026033	.001700	....	....	
15,000	60,000	.028200	.002167	....	....	
15,500	62,000	.032333	.004133	....	....	
16,000	64,000	.037167	.004834	....	....	
16,500	66,000	.044000	.006833	....	....	
17,000	68,000	.050000	.006000	....	....	
17,500	70,000	.058833	.008833	....	....	
18,000	72,000	.0700	.011167	....	....	
18,500	74,000	.0967	.0267	....	....	
18,920	75,680	.1600	.0633	....	....	Tensile strength.

General summary.

Specific gravity		7.8632
Hardness		12.14
Tensile strength per square inch of original section	pounds	75,680
Elastic limit per square inch of original section	do	44,000
Elongation per inch after rupture	inch	0.2467
Elongation per inch under strain at elastic limit	do	.001433
Reduction in diameter at point of rupture	do	.194
Reduction in area after rupture, per centum of original section		57.0
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.44*, ″.16 ″.14

No. 2111.

Marks, $\genfrac{}{}{0pt}{}{8\ T_{44}}{B\ T_2\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000300	.000133	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000567	.000100	0.	....	
6, 250	25, 000	.000733	.000166	0.	....	
7, 500	30, 000	.000900	.000167	0.	....	
8, 750	35, 000	.001067	.000167	0.	....	
9, 000	36, 000	.001133	.000066	....	....	
9, 250	37, 000	.001167	.000034	....	....	
9, 500	38, 000	.001200	.000033	....	....	
9. 750	39, 000	.001233	.000033	....	....	
10, 000	40, 000	.001367	.000134	.000067	.000067	Elastic limit.
10, 250	41, 000	.005333	.003966	....	....	
10, 500	42, 000	.007333	.002000	....	....	
10, 750	43, 000	.008000	.000667	....	....	
11, 000	44, 000	.009000	.001000	....	....	
11. 250	45, 000	.010000	.001000	....	....	
11, 500	46, 000	.011233	.001233	....	....	
11, 750	47, 000	.012833	.001600	....	....	
12, 000	48, 000	.013733	.000900	....	....	
12, 250	49, 000	.015000	.001267	....	....	
12, 500	50, 000	.016167	.001167	....	....	
12, 750	51, 000	.017867	.001700	....	....	
13, 000	52, 000	.018667	.000800	....	....	
13, 250	53, 000	.020233	.001566	....	....	
13, 500	54, 000	.021667	.001434	....	....	
13, 750	55, 000	.023000	.001333	....	....	
14, 000	56, 000	.024667	.001667	....	....	
14, 250	57, 000	.027333	.002666	....	....	
14, 500	58, 000	.029500	.002167	....	....	
14, 750	59, 000	.031167	.001667	....	....	
15, 000	60, 000	.033167	.002000	....	....	
15, 500	62, 000	.037667	.004500	....	....	
16, 000	64, 000	.043167	.005500	....	....	
16, 500	66, 000	.050000	.006833	....	....	
17, 000	68, 000	.059000	.009000	....	....	
17, 500	70, 000	.070667	.011667	....	....	
18, 000	72, 000	.0967	.026033	....	....	
18, 500	74, 000	.1300	.0333	....	....	
18, 690	74, 760	.1633	.0333	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................pounds.. 74, 760
Elastic limit per square inch of original section ....do. . 40, 000
Elongation per inch after rupture....................inch.. 0. 2567
Elongation per inch under strain at elastic limit ....do... .001367
Reduction in diameter at point of rupture....................do... .174
Reduction in area after rupture, per centum of original section.................... 52. 2
Position of rupture....................″.45 from middle of stem
Character of broken surface ....silky
Elongation of inch sections....................″.21, ″.42*, ″.14

No. 2112.

Marks, $^{8}_{B}T^{4}_{3}M$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000833	.000166	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001167	.000167	0.	....	
9,000	36,000	.001200	.000033	....	....	
9,250	37,000	.001233	.000033	....	....	
9,500	38,000	.001267	.000034	....	....	
9,750	39,000	.001300	.000033	....	....	Elastic limit.
10,000	40,000	.001367 .004067	.000067 .002700	....	....	
10,250	41,000	.007067	.003000	....	....	
10,500	42,000	.008333	.001266	....	....	
10,750	43,000	.009933	.001600	....	....	
11,000	44,000	.010433	.001500	....	....	
11,250	45,000	.011367	.000934	....	....	
11,500	46,000	.012800	.001433	....	....	
11,750	47,000	.014000	.001200	....	....	
12,000	48,000	.015667	.001667	....	....	
12,250	49,000	.016733	.001066	....	....	
12,500	50,000	.018267	.001534	....	....	
12,750	51,000	.019667	.001400	....	....	
13,000	52,000	.021167	.001500	....	....	
13,250	53,000	.022667	.001500	....	....	
13,500	54,000	.024367	.001700	....	....	
13,750	55,000	.026333	.001966	....	....	
14,000	56,000	.028333	.002000	....	....	
14,250	57,000	.030233	.001900	....	....	
14,500	58,000	.032500	.002267	....	....	
14,750	59,000	.034733	.002233	....	....	
15,000	60,000	.037067	.002334	....	....	
15,500	62,000	.042667	.005600	....	....	
16,000	64,000	.049667	.007000	....	....	
16,500	66,000	.057833	.008166	....	....	
17,000	68,000	.0700	.012167	....	....	
17,500	70,000	.0000	.1200	....	....	
18,000	72,000	.1188	.1233	....	....	
18,260	73,040	.1667	.1534	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	73,040
Elastic limit per square inch of original section	do...	39,000
Elongation per inch after rupture	inch..	0.2700
Elongation per inch under strain at elastic limit	do...	.001300
Reduction in diameter at point of rupture	do...	.194
Reduction in area after rupture, per centum of original section		57.0
Position of rupture		1 inch from neck
Character of broken surface		silky
Elongation of inch sections		″.45*, ″.21, ″.15

No. 2113.

Marks, $\overset{8\ \mathrm{T}_s}{\mathrm{M\ T_1\ I}}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000267	.000134	0.	....	
3, 750	15, 000	.000400	.000133	0.	....	
5, 000	20, 000	.000567	.000167	0.	....	
6, 250	25, 000	.000733	.000166	0.	....	
7, 500	30, 000	.000900	.000167	0.	....	
8, 750	35, 000	.001033	.000133	0.	....	
9, 000	36, 000	.001067	.000034	....	....	
9, 250	37, 000	.001067	0.	....	....	
9, 500	38, 000	.001100	.000033	....	....	
9, 750	39, 000	.001133	.000033	....	....	
10, 000	40, 000	.001200	.000067	0.	....	
10, 250	41, 000	.001233	.000033	....	....	
10, 500	42, 000	.001267	.000034	....	....	
10, 750	43, 000	.001300	.000033	....	....	
11, 000	44, 000	.001367	.000067	....	....	
11, 250	45, 000	.001433	.000066	....	....	Elastic limit.
11, 500	46, 000	.002033	.000600	....	....	
11, 750	47, 000	.003433	.001400	....	....	
12, 000	48, 000	.004833	.001400	....	....	
12, 250	49, 000	.005833	.001000	....	....	
12, 500	50, 000	.007100	.001267	....	....	
12, 750	51, 000	.008167	.001067	....	....	
13, 000	52, 000	.009367	.001200	....	....	
13, 250	53, 000	.010133	.000766	....	....	
13, 500	54, 000	.011200	.001067	....	....	
13, 750	55, 000	.012233	.001033	....	....	
14, 000	56, 000	.013567	.001334	....	....	
14, 250	57, 000	.014933	.001366	....	....	
14, 500	58, 000	.016333	.001400	....	....	
14, 750	59, 000	.017333	.001000	....	....	
15, 000	60, 000	.018700	.001367	....	....	
15, 500	62, 000	.021033	.002333	....	....	
16, 000	64, 000	.024000	.002967	....	....	
16, 500	66, 000	.027333	.003333	....	....	
17, 000	68, 000	.030933	.003600	....	....	
17, 500	70, 000	.035167	.004234	....	....	
18, 000	72, 000	.039000	.003833	....	....	
18, 500	74, 000	.044833	.005833	....	....	
19, 000	76, 000	.051667	.006834	....	....	
19, 500	78, 000	.060000	.008333	....	....	
20, 000	80, 000	.072500	.012500	....	....	
20, 500	82, 000	.1000	.0275	....	....	
20, 710	82, 840	.1433	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	82, 840
Elastic limit per square inch of original section	do...	45, 000
Elongation per inch after rupture	inch..	0. 1967
Elongation per inch under strain at elastic limit	do...	.001433
Reduction in diameter at point of rupture	do...	.115
Reduction in area after rupture, per centum of original section		36. 4
Position of rupture		½ inch from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.35*, ″.12, ″.11

No. 2114.

Marks, $\overset{8\ T_{46}}{M\ T,\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.		
2,500	10,000	.000333	.000166	0.		
3,750	15,000	.000500	.000167	0.		
5,000	20,000	.000667	.000167	0.		
6,250	25,000	.000833	.000166	0.		
7,500	30,000	.001000	.000167	0.		
8,750	35,000	.001133	.000133	0.		
10,000	40,000	.001333	.000200	.000033	.000033	
10,250	41,000	.001367	.000034			
10,500	42,000	.001400	.000033			
10,750	43,000	.001467	.000067			Elastic limit.
11,000	44,000	.002833	.001366			
11,250	45,000	.004500	.000667			
11,500	46,000	.006000	.001500			
11,750	47,000	.007233	.001233			
12,000	48,000	.008200	.001967			
12,250	49,000	.008867	.001667			
12,500	50,000	.010000	.001133			
12,750	51,000	.011333	.001333			
13,000	52,000	.012500	.001167			
13,250	53,000	.013433	.000933			
13,500	54,000	.014700	.001267			
13,750	55,000	.015767	.001067			
14,000	56,000	.017167	.001400			
14,250	57,000	.018300	.001133			
14,500	58,000	.019500	.001200			
14,750	59,000	.021133	.001633			
15,000	60,000	.022833	.001700			
15,500	62,000	.025500	.002667			
16,000	64,000	.028767	.003267			
16,500	66,000	.032833	.004066			
17,000	68,000	.036867	.004034			
17,500	70,000	.041833	.004966			
18,000	72,000	.048167	.006334			
18,500	74,000	.059333	.011166			
19,000	76,000	.065000	.005667			
19,500	78,000	.078000	.013000			
20,000	80,000	.1000	.0220			
20,300	81,200	.1400	.0400			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	81,200
Elastic limit per square inch of original section	do...	43,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do...	.001467
Reduction in diameter at point of rupture	do...	.074
Reduction in area after rupture, per centum of original section		24.6
Position of rupture		″.45 from middle of stem
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.14, ″.25*, ″.21

No. 2115.

Marks, $\overset{8\,T_{44}}{M\,T_{3}\,M}$
Diameter, ".564.
Sectional area, .25 square inch.

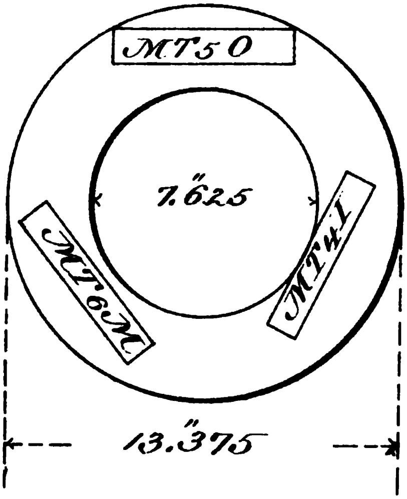
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000067	.000067	−.000033	−.000033	
2,500	10,000	.000200	.000133	−.000033	0.	
3,750	15,000	.000367	.000167	−.000033	0.	
5,000	20,000	.000533	.000166	−.000033	0.	
6,250	25,000	.000700	.000167	−.000033	0.	
7,500	30,000	.000867	.000167	−.000033	0.	
8,750	35,000	.001033	.000166	−.000033	0.	
10,000	40,000	.001200	.000167	−.000000	0.000033	Elastic limit.
10,250	41,000	.001867	.000667	....	....	
10,500	42,000	.003267	.001400	....	....	
10,750	43,000	.005133	.001866	....	....	
11,000	44,000	.007100	.001967	....	....	
11,250	45,000	.008000	.000900	....	....	
11,500	46,000	.008933	.000933	....	....	
11,750	47,000	.009833	.000900	....	....	
12,000	48,000	.010700	.000867	....	....	
12,250	49,000	.011800	.001100	....	....	
12,500	50,000	.013467	.001667	....	....	
12,750	51,000	.014033	.000566	....	....	
13,000	52,000	.015100	.001067	....	....	
13,250	53,000	.016533	.001433	....	....	
13,500	54,000	.017667	.001134	....	....	
13,750	55,000	.019000	.001333	....	....	
14,000	56,000	.020400	.001400	....	....	
14,250	57,000	.021767	.001367	....	....	
14,500	58,000	.023500	.001733	....	....	
14,750	59,000	.024833	.001333	....	....	
15,000	60,000	.026667	.001834	....	....	
15,500	62,000	.030233	.003566	....	....	
16,000	64,000	.034033	.003800	....	....	
16,500	66,000	.038467	.004434	....	....	
17,000	68,000	.043733	.005266	....	....	
17,500	70,000	.050000	.006267	....	....	
18,000	72,000	.058333	.008333	....	....	
18,500	74,000	.068333	.010000	....	....	
19,000	76,000	.0933	.024967	....	....	
19,500	78,000	.1233	.0300	....	....	
19,670	78,680	.1667	.0434	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	78,680
Elastic limit per square inch of original section	do...	40,000
Elongation per inch after rupture	inch..	0.2567
Elongation per inch under strain at elastic limit	do...	.001200
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44.6
Position of rupture		1".05 from neck
Character of broken surface		silky
Elongation of inch sections		".38*, ".20, ".19

Tube No. 46 8" converted Rifle

Additional specimens



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No. 2356.

Marks, $\overset{8\ T_{46}}{M\ T_{4}\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000433	.000133	0.	....	
5,000	20,000	.000633	.000200	0.	....	
6,250	25,000	.000767	.000134	0.	....	
7,500	30,000	.000967	.000200	.000033	.000033	
8,750	35,000	.001133	.000166	.000033	0.	
10,000	40,000	.001333	.000200	.000067	.000034	
10,250	41,000	.001367	.000034	....	....	
10,500	42,000	.001400	.000033	....	....	
10,750	43,000	.001433	.000033	....	....	Elastic limit.
11,000	44,000	.001567	.000134	....	....	
11,250	45,000	.002500	.000933	....	....	
11,500	46,000	.004100	.001600	....	....	
11,750	47,000	.006000	.001900	....	....	
12,000	48,000	.007367	.001367	....	....	
12,250	49,000	.008167	.000800	....	....	
12,500	50,000	.009500	.001333	....	....	
13,000	52,000	.011667	.002167	....	....	
13,500	54,000	.014000	.002333	....	....	
14,000	56,000	.016667	.002667	....	....	
14,500	58,000	.019333	.002666	....	....	
15,000	60,000	.022167	.002834	....	....	
15,500	62,000	.025067	.002900	....	....	
16,000	64,000	.028600	.003533	....	....	
16,500	66,000	.032333	.003733	....	....	
17,000	68,000	.036667	.004334	....	....	
17,500	70,000	.042167	.005500	....	....	
18,000	72,000	.049333	.007166	....	....	
18,500	74,000	.056667	.007334	....	....	
19,000	76,000	.070000	.013333	....	....	
19,500	78,000	.083333	.013333	....	....	
20,000	80,000	.1100	.026667	....	....	
20,200	80,800	.1600	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80,800
Elastic limit per square inch of original section	do...	43,000
Elongation per inch after rupture	inch..	0.2567
Elongation per inch under strain at elastic limit	do...	.001433
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section		52.2
Position of rupture		1″.40 from neck
Character of broken surface		silky
Elongation of inch sections		″.25, ″.36*, ″.16

No. 2357.

Marks, $\substack{8\ T\ 44\\ M\ T_{3}\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000233	.000133	0.	....	
3,750	15,000	.000433	.000200	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	0.	....	
10,000	40,000	.001233	.000133	0.	....	
10,250	41,000	.001300	.000067	....	....	
10,500	42,000	.001333	.000033	....	....	Elastic limit.
10,750	43,000	.001500	.000167	....	....	
11,000	44,000	.004667	.003167	....	....	
11,250	45,000	.005467	.000800	....	....	
11,500	46,000	.006667	.001200	....	....	
11,750	47,000	.007700	.001033	....	....	
12,000	48,000	.008700	.001000	....	....	
12,250	49,000	.009667	.000967	....	....	
12,500	50,000	.010667	.001000	....	....	
13,000	52,000	.012667	.002000	....	....	
13,500	54,000	.014967	.002300	....	....	
14,000	56,000	.017533	.002566	....	....	
14,500	58,000	.020167	.002634	....	....	
15,000	60,000	.023167	.003000	....	....	
15,500	62,000	.026000	.002833	....	....	
16,000	64,000	.029333	.003333	....	....	
16,500	66,000	.033167	.003834	....	....	
17,000	68,000	.037167	.004000	....	....	
17,500	70,000	.042267	.005100	....	....	
18,000	72,000	.048333	.006066	....	....	
18,500	74,000	.054867	.006534	....	....	
19,000	76,000	.063333	.008466	....	....	
19,500	78,000	.0767	.013367	....	....	
20,000	80,000	.1000	.0233	....	....	
20,400	81,600	.1667	.0667	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section.....pounds..	81,600
Elastic limit per square inch of original section.....do...	42,000
Elongation per inch after rupture.....inch..	0.1900
Elongation per inch under strain at elastic limit.....do...	.001333
Reduction in diameter at point of rupture.....do...	.064
Reduction in area after rupture, per centum of original section.....	27.6
Position of rupture.....	1″.4 from neck
Character of broken surface.....	granular; dull spot at circumference
Elongation of inch sections.....	″.13. ″.26*, ″.18

No. 2358.

Marks, $\overset{8\ \text{T.}}{\text{M T. M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.		
2, 500	10, 000	.000333	.000166	0.		
3, 750	15, 000	.000500	.000167	0.		
5, 000	20, 000	.000667	.000167	0.		
6, 250	25, 000	.000833	.000166	0.		
7, 500	30, 000	.001000	.000167	0.		
8, 750	35, 000	.001167	.000167	0.		
10, 000	40, 000	.001333	.000166	0.		
10, 250	41, 000	.001367	.000034			Elastic limit.
10, 500	42, 000	.001500	.000133			
10, 750	43, 000	.002233	.000733			
11, 000	44, 000	.003667	.001434			
11, 250	45, 000	.005600	.001933			
11, 500	46, 000	.007000	.001400			
11, 750	47, 000	.008000	.001000			
12, 000	48, 000	.008667	.000667			
12, 250	49, 000	.009667	.001000			
12, 500	50, 000	.010433	.000766			
13, 000	52, 000	.012833	.002400			
13, 500	54, 000	.015167	.002334			
14, 000	56, 000	.017833	.002666			
14, 500	58, 000	.020400	.002567			
15, 000	60, 000	.023067	.002667			
15, 500	62, 000	.025833	.002766			
16, 000	64, 000	.029167	.003334			
16, 500	66, 000	.033000	.003833			
17, 000	68, 000	.037500	.004500			
17, 500	70, 000	.042667	.005167			
18, 000	72, 000	.048000	.005333			
18, 500	74, 000	.055833	.007833			
19, 000	76, 000	.065000	.009167			
19, 500	78, 000	.0800	.0150			
20, 000	80, 000	.1067	.0267			
20, 260	81, 040	.1533	.0466			Tensile strength.

General summary.

Tensile strength per square inch of original section....pounds.. 81, 040
Elastic limit per square inch of original section....do... 41, 000
Elongation per inch after rupture....inch.. 0. 1967
Elongation per inch under strain at elastic limit....do... .001367
Reduction in diameter at point of rupture....do... .074
Reduction in area after rupture, per centum of original section.... 24. 6
Position of rupture....1″.23 from neck
Character of broken surface, granular; flaky line of dull-colored metal; opened cracks in surface of stem.
Elongation of inch sections....″.22, ″.22*, ″.15

No. 2114.

Marks, $\overset{8\ T_{44}}{M\ T_{2}O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.		
2, 500	10, 000	.000333	.000166	0.		
3, 750	15, 000	.000500	.000167	0.		
5, 000	20, 000	.000667	.000167	0.		
6, 250	25, 000	.000833	.000166	0.		
7, 500	30, 000	.001000	.000167	0.		
8, 750	35, 000	.001133	.000133	0.		
10, 000	40, 000	.001333	.000200	.000033	.000033	
10, 250	41, 000	.001367	.000034			
10, 500	42, 000	.001400	.000033			
10, 750	43, 000	.001467	.000067			Elastic limit.
11, 000	44, 000	.002833	.001366			
11, 250	45, 000	.004500	.000667			
11, 500	46, 000	.006000	.001500			
11, 750	47, 000	.007233	.001233			
12, 000	48, 000	.008200	.001967			
12, 250	49, 000	.008867	.001667			
12, 500	50, 000	.010000	.001133			
12, 750	51, 000	.011333	.001333			
13, 000	52, 000	.012500	.001167			
13, 250	53, 000	.013433	.000933			
13, 500	54, 000	.014700	.001267			
13, 750	55, 000	.015767	.001067			
14, 000	56, 000	.017167	.001400			
14, 250	57, 000	.018300	.001133			
14, 500	58, 000	.019500	.001200			
14, 750	59, 000	.021133	.001633			
15, 000	60, 000	.022833	.001700			
15, 500	62, 000	.025500	.002667			
16, 000	64, 000	.028767	.003267			
16, 500	66, 000	.032833	.004066			
17, 000	68, 000	.036867	.004034			
17, 500	70, 000	.041833	.004966			
18, 000	72, 000	.048167	.006334			
18, 500	74, 000	.059333	.011166			
19, 000	76, 000	.065000	.005667			
19, 500	78, 000	.078000	.013000			
20, 000	80, 000	.1000	.0220			
20, 300	81, 200	.1400	.0400			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	81, 200
Elastic limit per square inch of original section	do...	43, 000
Elongation per inch after rupture	inch..	0. 2000
Elongation per inch under strain at elastic limit	do...	.001467
Reduction in diameter at point of rupture	do...	.074
Reduction in area after rupture, per centum of original section		24. 6
Position of rupture		″.45 from middle of stem
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.14, ″.25*, ″.21

No. 2115.

Marks, $\overset{8\,T_{46}}{M\,T_2\,M}$
Diameter, ″.564.
Sectional area, .25 square inch.

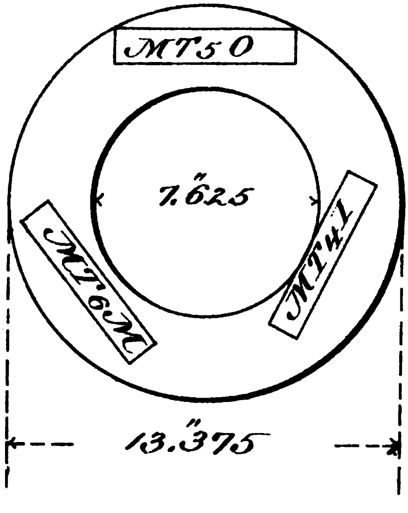
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000067	.000067	—.000033	—.000033	
2, 500	10, 000	.000200	.000133	—.000033	0.	
3, 750	15, 000	.000367	.000167	—.000033	0.	
5, 000	20, 000	.000533	.000166	—.000033	0.	
6, 250	25, 000	.000700	.000167	—.000033	0.	
7, 500	30, 000	.000867	.000167	—.000033	0.	
8, 750	35, 000	.001033	.000166	—.000033	0.	
10, 000	40, 000	.001200	.000167	—.000000	0.000033	Elastic limit.
10, 250	41, 000	.001867	.000667	....	....	
10, 500	42, 000	.003267	.001400	....	....	
10, 750	43, 000	.005133	.001866	....	....	
11, 000	44, 000	.007100	.001967	....	....	
11, 250	45, 000	.008000	.000900	....	....	
11, 500	46, 000	.008933	.000933	....	....	
11, 750	47, 000	.009833	.000900	....	....	
12, 000	48, 000	.010700	.000867	....	....	
12, 250	49, 000	.011800	.001100	....	....	
12, 500	50, 000	.013467	.001667	....	....	
12, 750	51, 000	.014033	.000566	....	....	
13, 000	52, 000	.015100	.001067	....	....	
13, 250	53, 000	.016533	.001433	....	....	
13, 500	54, 000	.017667	.001134	....	....	
13, 750	55, 000	.019000	.001333	....	....	
14, 000	56, 000	.020400	.001400	....	....	
14, 250	57, 000	.021767	.001367	....	....	
14, 500	58, 000	.023500	.001733	....	....	
14, 750	59, 000	.024833	.001333	....	....	
15, 000	60, 000	.026667	.001834	....	....	
15, 500	62, 000	.030233	.003566	....	....	
16, 000	64, 000	.034033	.003800	....	....	
16, 500	66, 000	.038467	.004434	....	....	
17, 000	68, 000	.043733	.005266	....	....	
17, 500	70, 000	.050000	.006267	....	....	
18, 000	72, 000	.058333	.008333	....	....	
18, 500	74, 000	.068333	.010000	....	....	
19, 000	76, 000	.0933	.024967	....	....	
19, 500	78, 000	.1233	.0300	....	....	
19, 670	78, 680	.1667	.0434	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................pounds..	78, 680
Elastic limit per square inch of original section....................do...	40, 000
Elongation per inch after rupture....................inch..	0. 2567
Elongation per inch under strain at elastic limit....................do...	.001200
Reduction in diameter at point of rupture....................do...	.144
Reduction in area after rupture, per centum of original section....................	44. 6
Position of rupture....................	1″.05 from neck
Character of broken surface....................	silky
Elongation of inch sections....................	″.38*, ″.20, ″.19

Tube No. 46 8" converted Rifle

Additional specimens



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No. 2356.

Marks, $\overset{8\,T_{46}}{M\,T_4\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000433	.000133	0.	....	
5,000	20,000	.000633	.000200	0.	....	
6,250	25,000	.000767	.000134	0.	....	
7,500	30,000	.000967	.000200	.000033	.000033	
8,750	35,000	.001133	.000166	.000033	0.	
10,000	40,000	.001333	.000200	.000067	.000034	
10,250	41,000	.001367	.000034	....	....	
10,500	42,000	.001400	.000033	....	....	
10,750	43,000	.001433	.000033	....	....	Elastic limit.
11,000	44,000	.001567	.000134	....	....	
11,250	45,000	.002500	.000933	....	....	
11,500	46,000	.004100	.001600	....	....	
11,750	47,000	.006000	.001900	....	....	
12,000	48,000	.007367	.001367	....	....	
12,250	49,000	.008167	.000800	....	....	
12,500	50,000	.009500	.001333	....	....	
13,000	52,000	.011667	.002167	....	....	
13,500	54,000	.014000	.002333	....	....	
14,000	56,000	.016667	.002667	....	....	
14,500	58,000	.019333	.002666	....	....	
15,000	60,000	.022167	.002834	....	....	
15,500	62,000	.025067	.002900	....	....	
16,000	64,000	.028600	.003533	....	....	
16,500	66,000	.032333	.003733	....	....	
17,000	68,000	.036667	.004334	....	....	
17,500	70,000	.042167	.005500	....	....	
18,000	72,000	.049333	.007166	....	....	
18,500	74,000	.056667	.007334	....	....	
19,000	76,000	.070000	.013333	....	....	
19,500	78,000	.083333	.013333	....	....	
20,000	80,000	.1100	.026667	....	....	
20,200	80,800	.1600	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80,800
Elastic limit per square inch of original section	do...	43,000
Elongation per inch after rupture	inch..	0.2567
Elongation per inch under strain at elastic limit	do...	.001433
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section		52.2
Position of rupture		1″.40 from neck
Character of broken surface		silky
Elongation of inch sections		″.25, ″.36*, ″.16

No. 2357.

Marks, $\overset{8}{\text{M}}\ \overset{\text{T}}{\text{T}_{5}}\ {}^{46}\text{O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000233	.000133	0.	....	
3,750	15,000	.000433	.000200	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	0.	....	
10,000	40,000	.001233	.000133	0.	....	
10,250	41,000	.001300	.000067	....	....	
10,500	42,000	.001333	.000033	....	....	Elastic limit.
10,750	43,000	.001500	.000167	....	....	
11,000	44,000	.004667	.003167	....	....	
11,250	45,000	.005467	.000800	....	....	
11,500	46,000	.006667	.001200	....	....	
11,750	47,000	.007700	.001033	....	....	
12,000	48,000	.008700	.001000	....	....	
12,250	49,000	.009667	.000967	....	....	
12,500	50,000	.010667	.001000	....	....	
13,000	52,000	.012667	.002000	....	....	
13,500	54,000	.014967	.002300	....	....	
14,000	56,000	.017533	.002566	....	....	
14,500	58,000	.020167	.002634	....	....	
15,000	60,000	.023167	.003000	....	....	
15,500	62,000	.026000	.002833	....	....	
16,000	64,000	.029333	.003333	....	....	
16,500	66,000	.033167	.003834	....	....	
17,000	68,000	.037167	.004000	....	....	
17,500	70,000	.042267	.005100	....	....	
18,000	72,000	.048333	.006066	....	....	
18,500	74,000	.054867	.006534	....	....	
19,000	76,000	.063333	.008466	....	....	
19,500	78,000	.0767	.013367	....	....	
20,000	80,000	.1000	.0233	....	....	
20,400	81,600	.1667	.0667	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	81,600
Elastic limit per square inch of original section	do...	42,000
Elongation per inch after rupture	inch..	0.1900
Elongation per inch under strain at elastic limit	do...	.001333
Reduction in diameter at point of rupture	do...	.084
Reduction in area after rupture, per centum of original section		27.6
Position of rupture		1″.4 from neck
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.13, ″.26*, ″.18

No. 2358.

Marks, $\overset{8\ T_{48}}{M\ T_8\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

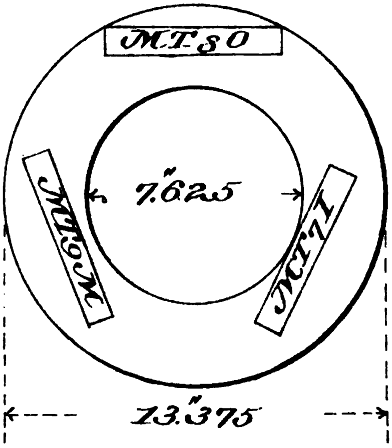
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000500	.000167	0.	....	
5, 000	20, 000	.000667	.000167	0.	....	
6, 250	25, 000	.000833	.000166	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
8, 750	35, 000	.001167	.000167	0.	....	
10, 000	40, 000	.001333	.000166	0.	....	
10, 250	41, 000	.001367	.000034	....	....	Elastic limit.
10, 500	42, 000	.001500	.000133	....	....	
10, 750	43, 000	.002233	.000733	....	....	
11, 000	44, 000	.003667	.001434	....	....	
11, 250	45, 000	.005600	.001933	....	....	
11, 500	46, 000	.007000	.001400	....	....	
11, 750	47, 000	.008000	.001000	....	....	
12, 000	48, 000	.008667	.000667	....	....	
12, 250	49, 000	.009667	.001000	....	....	
12, 500	50, 000	.010433	.000766	....	....	
13, 000	52, 000	.012833	.002400	....	....	
13, 500	54, 000	.015167	.002334	....	....	
14, 000	56, 000	.017833	.002666	....	....	
14, 500	58, 000	.020400	.002567	....	....	
15, 000	60, 000	.023067	.002667	....	....	
15, 500	62, 000	.025833	.002766	....	....	
16, 000	64, 000	.029167	.003334	....	....	
16, 500	66, 000	.033000	.003833	....	....	
17, 000	68, 000	.037500	.004500	....	....	
17, 500	70, 000	.042667	.005167	....	....	
18, 000	72, 000	.048000	.005333	....	....	
18, 500	74, 000	.055833	.007833	....	....	
19, 000	76, 000	.065000	.009167	....	....	
19, 500	78, 000	.0800	.0150	....	....	
20, 000	80, 000	.1067	.0267	....	....	
20, 260	81, 040	.1533	.0466	....	....	Tensile strength.

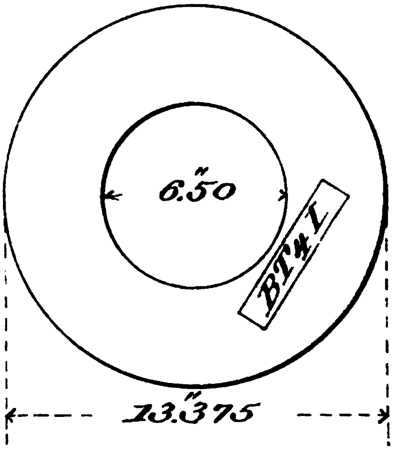
General summary.

Tensile strength per square inch of original section....................................pounds.. 81, 040
Elastic limit per square inch of original section...do... 41, 000
Elongation per inch after rupture...inch.. 0. 1967
Elongation per inch under strain at elastic limit ....do... .001367
Reduction in diameter at point of rupture...do... .074
Reduction in area after rupture, per centum of original section.................................. 24. 6
Position of rupture ....1″.23 from neck
Character of broken surface, granular; flaky line of dull-colored metal; opened cracks in surface of stem.
Elongation of inch sections ....″.22, ″.22*, ″.15

Tube No. 46 8" converted Rifle

Additional specimens





No. 2434.

Marks, $\overset{8\,T_{46}}{B\,T_4\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000200	.000100	0.	....	
3, 750	15, 000	.000367	.000167	0.	....	
5, 000	20, 000	.000567	.000200	0.	....	
6, 250	25, 000	.000733	.000166	0.	....	
7, 500	30, 000	.000900	.000167	0.	....	
8, 750	35, 000	.001067	.000167	0.	....	
10, 000	40, 000	.001267	.000200	....	....	
10, 250	41, 000	.001333	.000066	....	....	
10, 500	42, 000	.001400	.000067	....	....	
10, 750	43, 000	.001433	.000033	....	....	Elastic limit.
11, 000	44, 000	.005833	.004400	....	....	
11, 250	45, 000	.007433	.001600	....	....	
11, 500	46, 000	.009000	.001567	....	....	
11, 750	47, 000	.010033	.001033	....	....	
12, 000	48, 000	.011033	.001000	....	....	
12, 250	49, 000	.012167	.001134	....	....	
12, 500	50, 000	.013767	.001600	....	....	
13, 000	52, 000	.016467	.002700	....	....	
13, 500	54, 000	.019167	.002700	....	....	
14, 000	56, 000	.022333	.003166	....	....	
14, 500	58, 000	.026167	.003834	....	....	
15, 000	60. 000	.030333	.004166	....	....	
15, 500	62, 000	034667	.004334	....	....	
16, 000	64, 000	.039667	.005000	....	....	
16, 500	66, 000	.045833	.006166	....	....	
17, 000	68, 000	.0567	.010867	....	....	
17, 500	70, 000	.0667	.0100	....	....	
18, 000	72, 000	.0800	.0133	....	....	
18, 500	74, 000	.1033	.0233	....	....	
18, 810	75, 240	.1733	.0700	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section........pounds..	75, 240
Elastic limit per square inch of original section........do...	43, 000
Elongation per inch after rupture........inch..	0. 2867
Elongation per inch under strain at elastic limit........do...	.001483
Reduction in diameter at point of rupture........do...	.204
Reduction in area after rupture, per centum of original section........	59. 3
Position of rupture........	1″.40 from neck
Character of broken surface........	silky
Elongation of inch sections........	″.15, ″.41*, ″.30

No. 2435.

Marks, $^{8\ T.}_{M\ T.\ I}$
Diameter, ''.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001133	.000200	0.	....	
10,000	40,000	.001300	.000167	....	....	Elastic limit.
10,250	41,000	.001600	.000300	....	....	
10,500	42,000	.002833	.001233	....	....	
10,750	43,000	.004667	.001834	....	....	
11,000	44,000	.007433	.002766	....	....	
11,250	45,000	.008333	.000900	....	....	
11,500	46,000	.009633	.001300	....	....	
11,750	47,000	.010433	.000800	....	....	
12,000	48,000	.011500	.001067	....	....	
12,250	49,000	.012667	.001167	....	....	
12,500	50,000	.014000	.001333	....	....	
13,000	52,000	.016667	.002667	....	....	
13,500	54,000	.019167	.002500	....	....	
14,000	56,000	.021833	.002666	....	....	
14,500	58,000	.025167	.003334	....	....	
15,000	60,000	.029000	.003833	....	....	
15,500	62,000	.033000	.004000	....	....	
16,000	64,000	.037333	.004333	....	....	
16,500	66,000	.0433	.005967	....	....	
17,000	68,000	.0533	.0100	....	....	
17,500	70,000	.0633	.0100	....	....	
18,000	72,000	.0700	.0067	....	....	
18,500	74,000	.0867	.0167	....	....	
19,000	76,000	.1100	.0233	....	....	
19,200	76,800	.1600	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76,800
Elastic limit per square inch of original section	do...	40,000
Elongation per inch after rupture	inch..	0.2300
Elongation per inch under strain at elastic limit	do...	.001300
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section		52.2
Position of rupture		''.85 from neck
Character of broken surface		silky
Elongation of inch sections		''.13, ''.17, ''.39*

No. 2436.

Marks, $\overset{8}{\text{M}}\ \overset{\text{T}_{46}}{\text{T}}$, O
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000200	.000100	0.	....	
3,750	15,000	.000333	.000133	0.	....	
5,000	20,000	.000500	.000167	0.	....	
6,250	25,000	.000667	.000167	0.	....	
7,500	30,000	.000833	.000166	0.	....	
8,750	35,000	.001033	.000200	0.	....	Elastic limit.
9,000	36,000	.002033	.001000	....	....	
9,250	37,000	.003600	.001567	....	....	
9,500	38,000	.005000	.001400	....	....	
9,750	39,000	.006367	.001367	....	....	
10,000	40,000	.008100	.001733	....	....	
10,250	41,000	.009367	.001267	....	....	
10,500	42,000	.010400	.001033	....	....	
10,750	43,000	.011333	.000933	....	....	
11,000	44,000	.012300	.000967	....	....	
11,250	45,000	.013667	.001367	....	....	
11,500	46,000	.014867	.001200	....	....	
11,750	47,000	.016000	.001133	....	....	
12,000	48,000	.017167	.001167	....	....	
12,250	49,000	.018433	.001266	....	....	
12,500	50,000	.019700	.001267	....	....	
13,000	52,000	.022667	.002967	....	....	
13,500	54,000	.026000	.003333	....	....	
14,000	56,000	.029500	.003500	....	....	
14,500	58,000	.033333	.003833	....	....	
15,000	60,000	.038833	.005500	....	....	
15,500	62,000	.0433	.004467	....	....	
16,000	64,000	.0533	.0100	....	....	
16,500	66,000	.0633	.0100	....	....	
17,000	68,000	.0700	.0067	....	....	
17,500	70,000	.0833	.0133	....	....	
18,000	72,000	.1033	.0200	....	....	
18,810	73,240	.1600	.0567	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	73,240
Elastic limit per square inch of original section	do...	35,000
Elongation per inch after rupture	inch..	0.2167
Elongation per inch under strain at elastic limit	do...	.001033
Reduction in diameter at point of rupture	do...	.114
Reduction in area after rupture, per centum of original section		36.4
Position of rupture		1″.05 from neck
Character of broken surface		granular; flaky spot at circumference
Elongation of inch sections		″.35*, ″.19, ″.11

No. 2435.

Marks, $\overset{8\ T_{44}}{M\ T,\ I}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.		
2,500	10,000	.000267	.000134	0.		
3,750	15,000	.000433	.000166	0.		
5,000	20,000	.000600	.000167	0.		
6,250	25,000	.000767	.000167	0.		
7,500	30,000	.000933	.000166	0.		
8,750	35,000	.001133	.000200	0.		
10,000	40,000	.001300	.000167			Elastic limit.
10,250	41,000	.001600	.000300			
10,500	42,000	.002833	.001233			
10,750	43,000	.004667	.001834			
11,000	44,000	.007433	.002766			
11,250	45,000	.008333	.000900			
11,500	46,000	.009633	.001300			
11,750	47,000	.010433	.000800			
12,000	48,000	.011500	.001067			
12,250	49,000	.012667	.001167			
12,500	50,000	.014000	.001333			
13,000	52,000	.016667	.002667			
13,500	54,000	.019167	.002500			
14,000	56,000	.021833	.002666			
14,500	58,000	.025167	.003334			
15,000	60,000	.029000	.003833			
15,500	62,000	.033000	.004000			
16,000	64,000	.037333	.004333			
16,500	66,000	.0433	.005967			
17,000	68,000	.0533	.0100			
17,500	70,000	.0633	.0100			
18,000	72,000	.0700	.0067			
18,500	74,000	.0867	.0167			
19,000	76,000	.1100	.0233			
19,200	76,800	.1600	.0500			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76,800
Elastic limit per square inch of original section	do...	40,000
Elongation per inch after rupture	inch..	0.2300
Elongation per inch under strain at elastic limit	do...	.001300
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section		52.2
Position of rupture		".85 from neck
Character of broken surface		silky
Elongation of inch sections		".13, ".17, ".39

No. 2436.

Marks, $\overset{8}{\mathrm{M}}\overset{\mathrm{T_{ss}}}{\mathrm{T}}$, O
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000200	.000100	0.	....	
3, 750	15, 000	.000333	.000133	0.	....	
5, 000	20, 000	.000500	.000167	0.	....	
6, 250	25, 000	.000667	.000167	0.	....	
7, 500	30, 000	.000833	.000166	0.	....	
8, 750	35, 000	.001033	.000200	0.	....	Elastic limit.
9, 000	36, 000	.002033	.001000	....	....	
9, 250	37, 000	.003600	.001567	....	....	
9, 500	38, 000	.005000	.001400	....	....	
9, 750	39, 000	.006367	.001367	....	....	
10, 000	40, 000	.008100	.001733	....	....	
10, 250	41, 000	.009367	.001267	....	....	
10, 500	42, 000	.010400	.001033	....	....	
10, 750	43, 000	.011333	.000933	....	....	
11, 000	44, 000	.012300	.000967	....	....	
11, 250	45, 000	.013667	.001367	....	....	
11, 500	46, 000	.014867	.001200	....	....	
11, 750	47, 000	.016000	.001133	....	....	
12, 000	48, 000	.017167	.001167	....	....	
12, 250	49, 000	.018433	.001266	....	....	
12, 500	50, 000	.019700	.001267	....	....	
13, 000	52, 000	.022667	.002967	....	....	
13, 500	54, 000	.026000	.003333	....	....	
14, 000	56, 000	.029500	.003500	....	....	
14, 500	58, 000	.033333	.003833	....	....	
15, 000	60, 000	.038833	.005500	....	....	
15, 500	62, 000	.0433	.004467	....	....	
16, 000	64, 000	.0533	.0100	....	....	
16, 500	66, 000	.0633	.0100	....	....	
17, 000	68, 000	.0700	.0067	....	....	
17, 500	70, 000	.0833	.0133	....	....	
18, 000	72, 000	.1033	.0200	....	....	
18, 310	73, 240	.1600	.0567	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	73, 240
Elastic limit per square inch of original section	do...	35, 000
Elongation per inch after rupture	inch..	0. 2167
Elongation per inch under strain at elastic limit	do...	.001033
Reduction in diameter at point of rupture	do...	.114
Reduction in area after rupture, per centum of original section		36. 4
Position of rupture		1″.05 from neck
Character of broken surface		granular; flaky spot at circumference
Elongation of inch sections		″.35*, ″.19, ″.11

No. 2437.

Marks, $\overset{8\ \mathrm{T}}{\mathrm{M\ T,\ M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	.0	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000467	.000200	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
7,750	31,000	.001000	.000033	....	....	
8,000	32,000	.001033	.000033	....	....	
8,250	33,000	.001067	.000034	....	....	
8,500	34,000	.001133	.000066	....	....	Elastic limit.
8,750	35,000	.002433	.001300	....	....	
9,000	36,000	.006833	.004400	....	....	
9,250	37,000	.007500	.000667	....	....	
9,500	38,000	.008233	.000733	....	....	
9,750	39,000	.009267	.001034	....	....	
10,000	40,000	.010400	.001133	....	....	
10,500	42,000	.012333	.001933	....	....	
11,000	44,000	.014667	.002334	....	....	
11,500	46,000	.017100	.002433	....	....	
12,000	48,000	.019500	.002400	....	....	
12,500	50,000	.022333	.002833	....	....	
13,000	52,000	.025400	.003067	....	....	
13,500	54,000	.027333	.001933	....	....	
14,000	56,000	.032333	.005000	....	....	
14,500	58,000	.037000	.004667	....	....	
15,000	60,000	.0433	.0063	....	....	
15,500	62,000	.0500	.0067	....	....	
16,000	64,000	.0567	.0067	....	....	
16,500	66,000	.0667	.0100	....	....	
17,000	68,000	.0767	.0100	....	....	
17,500	70,000	.0967	.0200	....	....	
18,000	72,000	.1300	.0333	....	....	
18,280	73,120	.1733	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	73,120
Elastic limit per square inch of original section	do...	34,000
Elongation per inch after rupture	inch..	0.2333
Elongation per inch under strain at elastic limit	do...	.001133
Reduction in diameter at point of rupture	do...	.094
Reduction in area after rupture, per centum of original section		30.6
Position of rupture		1″.55 from neck
Character of broken surface		granular; flaky spot at circumference
Elongation of inch sections		″.18, ″.28+, ″.24

No. 2116..

Marks, $\overset{8\ T_{\sigma}}{B\ T_{1}\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000500	.000167	0.	....	
5, 000	20, 000	.000667	.000167	0.	....	
6, 250	25, 000	.000833	000166	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
8, 750	35, 000	.001167	.000167	0.	....	
10, 000	40, 000	.001367	.000200	.000033	.000033	
10, 250	41, 000	.001400	.000033	....	....	
10, 500	42, 000	.001433	.000033	....	....	Elastic limit.
10, 750	43, 000	.003467	.002034	....	....	
11, 000	44, 000	.005200	.001733	....	....	
11, 250	45, 000	.008500	.003300	....	....	
11, 500	46, 000	.010000	.001500	....	....	
11, 750	47, 000	.011333	.001333	....	....	
12, 000	48, 000	.012333	.001000	....	....	
12, 250	49, 000	.013200	.000867	....	....	
12, 500	50, 000	.014167	.000967	....	....	
12, 750	51, 000	.015767	.001600	....	....	
13, 000	52, 000	.017467	.001700	....	....	
13, 250	53, 000	.018833	.001366	....	....	
13, 500	54, 000	.020233	.001400	....	....	
13, 750	55, 000	.021667	.001434	....	....	
14, 000	56, 000	.023500	.001833	....	....	
14, 250	57, 000	.025167	.001667	....	....	
14, 500	58, 000	.027233	.002066	....	....	
14, 750	59, 000	.029000	.001767	....	....	
15, 000	60, 000	.031600	.002600	....	....	
15, 500	62, 000	.036667	.005067	....	....	
16, 000	64, 000	.041667	.005000	....	....	
16, 500	66, 000	.048333	.006666	....	....	
17, 000	68, 000	.056667	.008334	....	....	
17, 500	70, 000	.0667	.010033	....	....	
18, 000	72, 000	.0900	.0233	....	....	
18, 500	74, 000	.1200	.0300	....	....	
18, 610	74, 440	.1783	.0533	....	....	Tensile strength.

General summary.

Specific gravity	7. 8607
Hardness	11. 81
Tensile strength per square inch of original section ....pounds..	74, 440
Elastic limit per square inch of original section.......do...	42, 000
Elongation per inch after rupture.......inch..	0. 2767
Elongation per inch under strain at elastic limit.......do...	.001433
Reduction in diameter at point of rupture.......do...	.184
Reduction in area after rupture, per centum of original section	54. 6
Position of rupture	1 inch from neck
Character of broken surface	silky; cracks opened in surface of stem
Elongation of inch sections	″.45*, ″.22, ″.16

No. 2117.

Marks, ${}^{8\ T_{47}}_{B\ T_2\ O}$
Diameter, ".565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.		
2,500	10,000	.000300	.000133	0.		
3,750	15,000	.000500	.000200	0.		
5,000	20,000	.000667	.000167	0.		
6,250	25,000	.000833	.000166	0.		
7,500	30,000	.000967	.000134	0.		
8,750	35,000	.001133	.000166	0.		
9,000	36,000	.001133	.0			
9,250	37,000	.001167	.000034			
9,500	38,000	.001200	.000033			
9,750	39,000	.001233	.000033			Elastic limit.
10,000	40,000	.012267	.011034			
10,250	41,000	.012833	.000566			
10,500	42,000	.013867	.001034			
10,750	43,000	.015067	.001200			
11,000	44,000	.016167	.001100			
11,250	45,000	.017533	.001366			
11,500	46,000	.019200	.001667			
11,750	47,000	.020000	.000800			
12,000	48,000	.021667	.001667			
12,250	49,000	.023667	.002000			
12,500	50,000	.025367	.001700			
12,750	51,000	.027067	.001700			
13,000	52,000	.028900	.001833			
13,250	53,000	.030500	.001600			
13,500	54,000	.032833	.002333			
13,750	55,000	.034733	.001900			
14,000	56,000	.037433	.002700			
14,250	57,000	.040000	.002567			
14,500	58,000	.043500	.003500			
14,750	59,000	.046500	.003000			
15,000	60,000	.049833	.003333			
15,500	62,000	.057667	.007834			
16,000	64,000	.0667	.009033			
16,500	66,000	.0833	.0166			
17,000	68,000	.1000	.0167			
17,500	70,000	.1333	.0333			
17,630	70,520	.1800	.0467			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	70,520
Elastic limit per square inch of original section	do...	39,000
Elongation per inch after rupture	inch..	0.2833
Elongation per inch under strain at elastic limit	do...	.001233
Reduction in diameter at point of rupture	do...	.184
Reduction in area after rupture, per centum of original section		54.6
Position of rupture		".60 from middle of stem
Character of broken surface		silky
Elongation of inch sections		".40*, ".30, ".15

No. 2118.

Marks, $_{B}\overset{8\,T_4}{T_3}{}_{M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000333	.000200	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000800	.000133	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
9,000	36,000	.001167	.000034	....	....	
9,250	37,000	.001200	.000033	....	....	
9,500	38,000	.001233	.000033	....	....	Elastic limit.
9,750	39,000	.001667	.000434	....	....	
10,000	40,000	.012733	.010066	....	....	
10,250	41,000	.013733	.001000	....	....	
10,500	42,000	.014867	.001134	....	....	
10,750	43,000	.015933	.001066	....	....	
11,000	44,000	.017367	.001434	....	....	
11,250	45,000	.018533	.001166	....	....	
11,500	46,000	.020400	.001867	....	....	
11,750	47,000	.021700	.001300	....	....	
12,000	48,000	.023367	.001667	....	....	
12,250	49,000	.024933	.001566	....	....	
12,500	50,000	.026833	.001900	....	....	
12,750	51,000	.028433	.001600	....	....	
13,000	52,000	.031167	.002734	....	....	
13,250	53,000	.033533	.002366	....	....	
13,500	54,000	.035833	.002300	....	....	
13,750	55,000	.038000	.002167	....	....	
14,000	56,000	.041000	.003000	....	....	
14,250	57,000	.043900	.002900	....	....	
14,500	58,000	.046500	.002600	....	....	
14,750	59,000	.050100	.003600	....	....	
15,000	60,000	.054333	.004233	....	....	
15,500	62,000	.0633	.008967	....	....	
16,000	64,000	.0733	.0100	....	....	
16,500	66,000	.0933	.0200	....	....	
17,000	68,000	.1267	.0334	....	....	
17,800	69,200	.1767	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	69,200
Elastic limit per square inch of original section	do...	38,000
Elongation per inch after rupture	inch..	0.2800
Elongation per inch under strain at elastic limit	do...	.001233
Reduction in diameter at point of rupture	do...	.184
Reduction in area after rupture, per centum of original section		54.6
Position of rupture		1 inch from neck
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		″.48, ″.22, ″.14

No. 2119.

Marks, $\overset{8}{\text{M}}\ \overset{\text{T}_{47}}{\text{T}},\ \text{I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000433	.000133	—.000033	—.000033	
5,000	20,000	.000600	.000167	—.000033	0.	
6,250	25,000	.000800	.000200	—.000033	0.	
7,500	30,000	.000967	.000167	—.000033	0.	
8,750	35,000	.001100	.000133	—.000033	0.	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001167	.000034	....	....	
9,500	38,000	.001200	.000033	....	....	
9,750	39,000	.001233	.000033	....	....	Elastic limit.
10,000	40,000	.012867	.011634	....	....	
10,250	41,000	.013600	.000733	....	....	
10,500	42,000	.014367	.000767	....	....	
10,750	43,000	.015333	.000966	....	....	
11,000	44,000	.016500	.001167	....	....	
11,250	45,000	.017667	.001167	....	....	
11,500	46,000	.019000	.001333	....	....	
11,750	47,000	.020500	.001500	....	....	
12,000	48,000	.021833	.001333	....	....	
12,250	49,000	.023167	.001334	....	....	
12,500	50,000	.025000	.001833	....	....	
12,750	51,000	.026667	.001667	....	....	
13,000	52,000	.028333	.001666	....	....	
13,250	53,000	.030000	.001667	....	....	
13,500	54,000	.032100	.002100	....	....	
13,750	55,000	.033833	.001733	....	....	
14,000	56,000	.036667	.002834	....	....	
14,250	57,000	.039000	.002333	....	....	
14,500	58,000	.041500	.002500	....	....	
14,750	59,000	.044000	.002500	....	....	
15,000	60,000	.047333	.003333	....	....	
15,500	62,000	.054333	.007000	....	....	
16,000	64,000	.062167	.007834	....	....	
16,500	66,000	.0700	.007833	....	....	
17,000	68,000	.0900	.0200	....	....	
17,500	70,000	.1067	.0167	....	....	
18,000	72,000	.1433	.0366	....	....	
18,060	72,240	.1867	.0434	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section.........pounds.. 72,240
Elastic limit per square inch of original section.........do... 39,000
Elongation per inch after rupture.........inch.. 0.2933
Elongation per inch under strain at elastic limit.........do... .001233
Reduction in diameter at point of rupture.........do... .164
Reduction in area after rupture, per centum of original section......... 49.7
Position of rupture.........⅓ inch from middle of stem
Character of broken surface.........silky; opened cracks in surface of stem
Elongation of inch sections......... ″.20, ″.48*, ″.20

No. 2120.

Marks, $\overset{8\ T_{47}}{M\ T_{3}\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000633	.000200	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
9,000	36,000	.001167	.000034	....	....	
9,250	37,000	.001200	.000033	....	....	
9,500	38,000	.001233	.000033	....	....	
9,750	39,000	.001300	.000067	....	....	
10,000	40,000	.001367	.000067	.000083	.000033	
10,250	41,000	.001400	.000033	....	....	Elastic limit.
10,500	42,000	.012133	.010733	....	....	
10,750	43,000	.012667	.000534	....	....	
11,000	44,000	.013800	.001133	....	....	
11,250	45,000	.015000	.001200	....	....	
11,500	46,000	.016333	.001333	....	....	
11,750	47,000	.017667	.001334	....	....	
12,000	48,000	.019367	.001700	....	....	
12,250	49,000	.020667	.001300	....	....	
12,500	50,000	.021800	.001133	....	....	
12,750	51,000	.023333	.001533	....	....	
13,000	52,000	.024933	.001600	....	....	
13,250	53,000	.026567	.001634	....	....	
13,500	54,000	.028467	.001900	....	....	
13,750	55,000	.030333	.001866	....	....	
14,000	56,000	.032333	.002000	....	....	
14,250	57,000	.034067	.001734	....	....	
14,500	58,000	.037067	.003000	....	....	
14,750	59,000	.039167	.002100	....	....	
15,000	60,000	.042333	.003166	....	....	
15,500	62,000	.048833	.006500	....	....	
16,000	64,000	.055666	.006834	....	....	
16,500	66,000	.065000	.009333	....	....	
17,000	68,000	.0767	.0117	....	....	
17,500	70,000	.0967	.0200	....	....	
18,000	72,000	.1300	.0333	....	....	
18,170	72,680	.1800	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	72,680
Elastic limit per square inch of original section	do...	41,000
Elongation per inch after rupture	inch..	0.2667
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44.6
Position of rupture		[illegible] inch from middle of stem
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		″.29, ″.32*, ″.19

No. 2119.

Marks, $\overset{8\ T_{47}}{M\ T,\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000433	.000133	—.000033	—.000033	
5,000	20,000	.000600	.000167	—.000033	0.	
6,250	25,000	.000800	.000200	—.000033	0.	
7,500	30,000	.000967	.000167	—.000033	0.	
8,750	35,000	.001100	.000133	—.000033	0.	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001167	.000034	....	....	
9,500	38,000	.001200	.000033	....	....	
9,750	39,000	.001233	.000033	....	....	Elastic limit.
10,000	40,000	.012867	.011634	....	....	
10,250	41,000	.013600	.000733	....	....	
10,500	42,000	.014367	.000767	....	....	
10,750	43,000	.015333	.000966	....	....	
11,000	44,000	.016500	.001167	....	....	
11,250	45,000	.017667	.001167	....	....	
11,500	46,000	.019000	.001333	....	....	
11,750	47,000	.020500	.001500	....	....	
12,000	48,000	.021833	.001333	....	....	
12,250	49,000	.023167	.001334	....	....	
12,500	50,000	.025000	.001833	....	....	
12,750	51,000	.026667	.001667	....	....	
13,000	52,000	.028333	.001666	....	....	
13,250	53,000	.030000	.001667	....	....	
13,500	54,000	.032100	.002100	....	....	
13,750	55,000	.033833	.001733	....	....	
14,000	56,000	.036667	.002834	....	....	
14,250	57,000	.039000	.002333	....	....	
14,500	58,000	.041500	.002500	....	....	
14,750	59,000	.044000	.002500	....	....	
15,000	60,000	.047333	.003333	....	....	
15,500	62,000	.054333	.007000	....	....	
16,000	64,000	.062167	.007834	....	....	
16,500	66,000	.0700	.007833	....	....	
17,000	68,000	.0900	.0200	....	....	
17,500	70,000	.1067	.0167	....	....	
18,000	72,000	.1433	.0366	....	....	
18,060	72,240	.1867	.0434	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	72,240
Elastic limit per square inch of original section	do...	39,000
Elongation per inch after rupture	inch..	0.2933
Elongation per inch under strain at elastic limit	do...	.001233
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section	..	49.7
Position of rupture		½ inch from middle of stem
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		″.20, ″.48*, ″.20

No. 2120.

Marks, $\overset{8}{\mathrm{M}}\,\overset{\mathrm{T}_{67}}{\mathrm{T}_{2}}\,\mathrm{O}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000267	.000134	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000633	.000200	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
9, 000	36, 000	.001167	.000034	....	....	
9, 250	37, 000	.001200	..000033	....	....	
0, 500	38, 000	.001233	.000033	....	....	
9, 750	39, 000	.001300	.000067	....	....	
10, 000	40, 000	.001367	.000067	.000033	.000033	
10, 250	41, 000	.001400	.000033	....	....	Elastic limit.
10, 500	42, 000	.012133	.010733	....	....	
10, 750	43, 000	.012667	.000534	....	....	
11, 000	44, 000	.013800	.001133	....	....	
11, 250	45, 000	.015000	.001200	....	....	
11, 500	46, 000	.016333	.001333	....	....	
11, 750	47, 000	.017667	.001334	....	....	
12, 000	48, 000	.019367	.001700	....	....	
12, 250	49, 000	.020667	.001300	....	....	
12, 500	50, 000	.021800	.001133	....	....	
12, 750	51, 000	.023333	.001533	....	....	
13, 000	52, 000	.024933	.001600	....	....	
13, 250	53, 000	.026567	.001634	....	....	
13, 500	54, 000	.028467	.001900	....	....	
13, 750	55, 000	.030333	.001866	....	....	
14, 000	56, 000	.032333	.002000	....	....	
14, 250	57, 000	.034067	.001734	....	....	
14, 500	58, 000	.037067	.003000	....	....	
14, 750	59, 000	.039167	.002100	....	....	
15, 000	60, 000	.042333	.003166	....	....	
15, 500	62, 000	.048833	.006500	....	....	
16, 000	64, 000	.055666	.006834	....	....	
16, 500	66, 000	.065000	.009333	....	....	
17, 000	68, 000	.0767	.0117	....	....	
17, 500	70, 000	.0967	.0200	....	....	
18, 000	72, 000	.1300	.0333	....	....	
18, 170	72, 680	.1800	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	72, 680
Elastic limit per square inch of original section............do...	41, 000
Elongation per inch after rupture............inch..	0. 2667
Elongation per inch under strain at elastic limit ....do...	.001400
Reduction in diameter at point of rupture............do...	.144
Reduction in area after rupture, per centum of original section............	44. 6
Position of rupture	⅜ inch from middle of stem
Character of broken surface............	silky; opened cracks in surface of stem
Elongation of inch sections............	″.29, ″.32*, ″.19

No. 2121.

Marks, $\overset{8\ T_7}{M\ T_1\ M}$

Diameter, ".564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000123	.000133	0.	....	
2, 500	10, 000	.000300	000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	Elastic limit.
9, 000	36, 000	.005300	.004167	....	....	
9, 250	37, 000	.009067	.003767	....	....	
9, 500	38, 000	.010000	.000933	....	....	
9, 750	39, 000	.010800	.000800	....	....	
10, 000	40, 000	.011667	.000867	....	....	
10, 250	41, 000	.012733	.001066	....	....	
10, 500	42, 000	.013900	.001167	....	....	
10, 750	43, 000	.015033	.001133	....	....	
11, 000	44, 000	.016000	.000967	....	....	
11, 250	45, 000	.017433	.001433	....	....	
11, 500	46, 000	.019000	.001567	....	....	
11, 750	47, 000	.020000	.001000	....	....	
12, 000	48, 000	.021267	.001267	....	....	
12, 250	49, 000	.022700	.001433	....	....	
12, 500	50, 000	.024067	.001367	....	....	
12, 750	51, 000	.025600	.001533	....	....	
13, 000	52, 000	.027467	.001867	....	....	
13, 250	53, 000	.029033	.001566	....	....	
13, 500	54, 000	.030733	.001700	....	....	
13, 750	55, 000	.032500	.001767	....	....	
14, 000	56, 000	.034667	.002167	....	....	
14, 250	57, 000	.036333	.001666	....	....	
14, 500	58, 000	.038767	.002434	....	....	
14, 750	59, 000	.041167	.002400	....	....	
15, 000	60, 000	.043767	.002600	....	....	
15, 500	62, 000	.050000	.006233	....	....	
16, 000	64, 000	.057833	.007333	....	....	
16, 500	66, 000	.065500	.008167	....	....	
17, 000	68, 000	.078000	.012500	....	....	
17, 500	70, 000	.0933	.0153	....	....	
18, 000	72, 000	.1133	.0200	....	....	
18, 390	73, 560	.1767	.0634	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	73, 560
Elastic limit per square inch of original section	do...	35, 000
Elongation per inch after rupture	inch..	0. 2333
Elongation per inch under strain at elastic limit	do...	.001133
Reduction in diameter at point of rupture	do...	.114
Reduction in area after rupture, per centum of original section		36. 4
Position of rupture		1 inch from neck
Character of broken surface		silky
Elongation of inch sections		".31*, ".23, ".16

No. 2158.

Marks, $\frac{8\ \mathrm{T_s}}{\mathrm{B\ T_1\ I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000833	.000166	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001167	.000167	0.	....	Elastic limit.
9,000	36,000	.001333	.000166	....	....	
9,250	37,000	.006000	.004667	....	....	
9,500	38,000	.010500	.004500	....	....	
9,750	39,000	.011667	.001167	....	....	
10,000	40,000	.012667	.001000	....	....	
10,250	41,000	.013733	.001066	....	....	
10,500	42,000	.015167	.001434	....	....	
10,750	43,000	.016533	.001366	....	....	
11,000	44,000	.018333	.001800	....	....	
11,250	45,000	.019667	.001334	....	....	
11,500	46,000	.021333	.001666	....	....	
11,750	47,000	.022900	.001567	....	....	
12,000	48,000	.024900	.002000	....	....	
12,250	49,000	.026333	.001433	....	....	
12,500	50,000	.028733	.002400	....	....	
13,000	52,000	.032667	.003934	....	....	
13,500	54,000	.037833	.005166	....	....	
14,000	56,000	.044000	.006167	....	....	
14,500	58,000	.051667	.007667	....	....	
15,000	60,000	.060000	.008333	....	....	
15,500	62,000	.070667	.010667	....	....	
16,000	64,000	.0867	.016033	....	....	
16,500	66,000	.1067	.0200	....	....	
17,000	68,000	.1567	.0500	....	....	
17,050	68,200	.1833	.0266	....	....	Tensile strength.

General summary.

Specific gravity.. 7.8586
Hardness.. 10.01
Tensile strength per square inch of original section........................pounds.. 68,200
Elastic limit per square inch of original section........................do... 35,000
Elongation per inch after rupture........................inch.. 0.2767
Elongation per inch under strain at elastic limit........................do... .001167
Reduction in diameter at point of rupture........................do... .134
Reduction in area after rupture, per centum of original section........................ 41.9
Position of rupture........................⅜ inch from middle of stem
Character of broken surface, granular, 50 per centum; silky, 50 per centum; opened cracks in surface of stem.
Elongation of inch sections........................″.25, ″.40*, ″.18

No. 2159.

Marks, $\overset{8\ T_{46}}{B\ T_2\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.		
2, 500	10, 000	.000300	.000167	0.		
3, 750	15, 000	.000433	.000133	0.		
5, 000	20, 000	.000600	.000167	0.		
6, 250	25, 000	.000767	.000167	0.		
7, 500	30, 000	.000933	.000166	0.		
8, 750	35, 000	.001100	.000167	0.		
9, 000	36, 000	.001167	.000067			
9, 250	37, 000	.001233	.000066			Elastic limit.
9, 500	38, 000	.003333	.002100			
9, 750	39, 000	.005167	.001834			
10, 000	40, 000	.007467	.002300			
10, 250	41, 000	.008667	.001200			
10, 500	42, 000	.009833	.001166			
10, 750	43, 000	.010733	.000900			
11, 000	44, 000	.011900	.001167			
11, 250	45, 000	.013333	.001433			
11, 500	46, 000	.014533	.001200			
11, 750	47, 000	.015667	.001134			
12, 000	48, 000	.017067	.001400			
12, 250	49, 000	.018500	.001433			
12, 500	50, 000	.020333	.001833			
13, 000	52, 000	.023333	.003000			
13, 500	54, 000	.027067	.003734			
14, 000	56, 000	.030400	.003333			
14, 500	58, 000	.034500	.004100			
15, 000	60, 000	.039833	.004833			
15, 500	62, 000	.045333	.006000			
16, 000	64, 000	.051833	.006500			
16, 500	66, 000	.061333	.009500			
17, 000	68, 000	.072000	.010667			
17, 500	70, 000	.0933	.0213			
18, 000	72, 000	.1233	.0300			
18, 160	72, 640	.1667	.0434			Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	72, 640
Elastic limit per square inch of original section....do...	37, 000
Elongation per inch after rupture....inch..	0. 2267
Elongation per inch under strain at elastic limit ....do...	.001233
Reduction in diameter at point of rupture....do...	.134
Reduction in area after rupture, per centum of original section....	41. 9
Position of rupture....	⅜ inch from neck
Character of broken surface	silky
Elongation of inch sections	″.36*, ″.18, ″.14

No. 2160.

Marks, $^{8\ T_{48}}_{B\ T_{3}\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	....	....	
9,000	36,000	.001167	.000034	....	....	
9,250	37,000	.001200	.000033	....	....	Elastic limit.
9,500	38,000	.001367	.000167	....	....	
9,750	39,000	.006333	.004966	....	....	
10,000	40,000	.008000	.001667	....	....	
10,250	41,000	.008700	.000700	....	....	
10,500	42,000	.009700	.001000	....	....	
10,750	43,000	.010700	.001000	....	....	
11,000	44,000	.012133	.001433	....	....	
11,250	45,000	.013733	.001600	....	....	
11,500	46,000	.015033	.001300	....	....	
11,750	47,000	.016000	.000967	....	....	
12,000	48,000	.017333	.001333	....	....	
12,250	49,000	.018500	.001167	....	....	
12,500	50,000	.020667	.002167	....	....	
13,000	52,000	.023733	.003066	....	....	
13,500	54,000	.027333	.003600	....	....	
14,000	56,000	.032333	.005000	....	....	
14,500	58,000	.036000	.003667	....	....	
15,000	60,000	.041433	.005433	....	....	
15,500	62,000	.047333	.005900	....	....	
16,000	64,000	.055833	.008500	....	....	
16,500	66,000	.065000	.009167	....	....	
17,000	68,000	.078333	.013333	....	....	
17,500	70,000	.1000	.021667	....	....	
17,930	71,720	.1733	.0733	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	71,720
Elastic limit per square inch of original section	do	37,000
Elongation per inch after rupture	inch	0.2600
Elongation per inch under strain at elastic limit	do	.001200
Reduction in diameter at point of rupture	do	.154
Reduction in area after rupture, per centum of original section		47.2
Position of rupture		1 inch from neck
Character of broken surface		silky
Elongation of inch sections		″.39*, ″.22, ″.17

No. 2161.

Marks, $\genfrac{}{}{0pt}{}{8\ T_{48}}{M\ T_{1}\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000367	.000200	0.	....	
3,750	15,000	.000467	.000100	0.	....	
5,000	20,000	.000667	.000200	0.	....	
6,250	25,000	.000833	.000166	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001133	.000133	0.	....	
9,000	36,000	.001200	.000067	....	....	
9,250	37,000	.001233	.000033	....	....	
9,500	38,000	.001300	.000067	....	....	
9,750	39,000	.001333	.000033	....	....	
10,000	40,000	.001367	.000034	....	....	Elastic limit.
10,250	41,000	.012000	.010633	....	....	
10,500	42,000	.012700	.000700	....	....	
10,750	43,000	.013500	.000800	....	....	
11,000	44,000	.014333	.000833	....	....	
11,250	45,000	.015500	.001167	....	....	
11,500	46,000	.016767	.001267	....	....	
11,750	47,000	.017833	.001066	....	....	
12,000	48,000	.019333	.001500	....	....	
12,250	49,000	.020667	.001334	....	....	
12,500	50,000	.021767	.001100	....	....	
13,000	52,000	.024500	.002738	....	....	
13,500	54,000	.027667	.003167	....	....	
14,000	56,000	.031167	.003500	....	....	
14,500	58,000	.034500	.003333	....	....	
15,000	60,000	.038467	.003967	....	....	
15,500	62,000	.043333	.004866	....	....	
16,000	64,000	.048833	.005500	....	....	
16,500	66,000	.055000	.006167	....	....	
17,000	68,000	.061667	.006667	....	....	
17,500	70,000	.0700	.008333	....	....	
18,000	72,000	.0867	.0167	....	....	
18,500	74,000	.1000	.0133	....	....	
18,980	75,920	.1400	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds..	75,920
Elastic limit per square inch of original section....................do...	40,000
Elongation per inch after rupture ....inch..	0.1500
Elongation per inch under strain at elastic limit ....do...	.001367
Reduction in diameter at point of rupture....................do...	.054
Reduction in area after rupture, per centum of original section	18.3
Position of rupture	¼ inch from middle of stem
Character of broken surface....................	granular, 15 per centum; dull flaky, 85 per centum
Elongation of inch sections....................	″.11, ″.20*, ″.14

No. 2162.

Marks, $\overset{8\ T_{48}}{M\ T_2\ O}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	.000033	.000033	
9,000	36,000	.001167	.000034	....	....	
9,250	37,000	.001200	.000033	....	....	
9,500	38,000	.001233	.000033	....	....	Elastic limit.
9,750	39,000	.011333	.000100	....	....	
10,000	40,000	.012600	.001267	....	....	
10,250	41,000	.013333	.000733	....	....	
10,500	42,000	.014333	.001000	....	....	
10,750	43,000	.015500	.001167	....	....	
11,000	44,000	.016867	.001367	....	....	
11,250	45,000	.018100	.001233	....	....	
11,500	46,000	.019500	.001400	....	....	
11,750	47,000	.020833	.001333	....	....	
12,000	48,000	.022333	.001500	....	....	
12,250	49,000	.023733	.001400	....	....	
12,500	50,000	.025400	.001667	....	....	
13,000	52,000	.028833	.003433	....	....	
13,500	54,000	.032667	.003834	....	....	
14,000	56,000	.067333	.004666	....	....	
14,500	58,000	.042333	.005000	....	....	
15,000	60,000	.047833	.005500	....	....	
15,500	62,000	.054000	.006167	....	....	
16,000	64,000	.061667	.007667	....	....	
16,500	66,000	.071667	.010000	....	....	
17,000	68,000	.0833	.011633	....	....	
17,500	70,000	.1000	.0167	....	....	
18,000	72,000	.1333	.0333	....	....	
18,200	72,800	.1800	.0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	72,800
Elastic limit per square inch of original section	do	38,000
Elongation per inch after rupture	inch	0.2400
Elongation per inch under strain at elastic limit	do	.001233
Reduction in diameter at point of rupture	do	.134
Reduction in area after rupture, per centum of original section		41.9
Position of rupture		″.45 from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.20, ″35*, ″.17

No. 2163.

Marks, $\overset{8\ T_{a}}{M\ T_{1}\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
9, 000	36, 000	.001200	.000067	....	....	
9, 250	37, 000	.001233	.000033	....	....	Elastic limit.
9, 500	38, 000	.010667	.009434	....	....	
9, 750	39, 000	.012000	.001333	....	....	
10, 000	40, 000	.013200	.001200	....	....	
10, 250	41, 000	.013733	.000533	....	....	
10, 500	42, 000	.015000	.001267	....	....	
10, 750	43, 000	.016167	.001167	....	....	
11, 000	44, 000	.017500	.001333	....	....	
11, 250	45, 000	.018667	.001167	....	....	
11, 500	46, 000	.020400	.001733	....	....	
11, 750	47, 000	.021600	.001200	....	....	
12, 000	48, 000	.023033	.001433	....	....	
12, 250	49, 000	.024667	.001634	....	....	
12, 500	50, 000	.026500	.001833	....	....	
13, 000	52, 000	.030200	.003700	....	....	
13, 500	54, 000	.034500	.004300	....	....	
14, 000	56, 000	.038000	.003500	....	....	
14, 500	58, 000	.043333	.005333	....	....	
15, 000	60, 000	.049167	.005834	....	....	
15, 500	62, 000	.056667	.007500	....	....	
16, 000	64, 000	.065000	.008333	....	....	
16, 500	66, 000	.075333	.010333	....	....	
17, 000	68, 000	.0933	.017967	....	....	
17, 500	70, 000	.1100	.0167	....	....	
17, 880	71, 520	.1667	.0567	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..................................pounds.. 71, 520
Elastic limit per square inch of original section..................................do .. 37, 000
Elongation per inch after rupture..................................inch.. 0.2333
Elongation per inch under strain at elastic limit..................................do... .001233
Reduction in diameter at point of rupture..................................do... .124
Reduction in area after rupture, per centum of original section.................................. 39.2
Position of rupture..................................¾ inch from middle of stem
Character of broken surface.................................. silky
Elongation of inch sections..................................″.30*, ″.27, ″.13

[Additional specimens.]

No. 2493.

Marks, $^{8\,T_{8}}_{B\,T_{4}\,I}$.
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000233	.000133	0.	....	
3,750	15,000	.000433	.000200	0.	....	
5,000	20,000	.000633	.000200	0.	....	
6,250	25,000	.000833	.000200	0.	....	
7,500	30,000	.001000	.000167	0.	....	
8,750	35,000	.001133	.000133	....	....	
9,000	36,000	.001167	.000034	....	....	
9,250	37,000	.001200	.000033	....	....	
9,500	38,000	.001233	.000033	....	....	
9,750	39,000	.001267	.000034	....	....	Elastic limit.
10,000	40,000	.001400	.000133	....	....	
10,250	41,000	.006000	.004600	....	....	
10,500	42,000	.010000	.004000	....	....	
10,750	43,000	.011333	.001333	....	....	
11,000	44,000	.012133	.000800	....	....	
11,250	45,000	.013100	.000967	....	....	
11,500	46,000	.014700	.001600	....	....	
11,750	47,000	.016000	.001300	....	....	
12,000	48,000	.017867	.001867	....	....	
12,250	49,000	.019033	.001166	....	....	
12,500	50,000	.020933	.001900	....	....	
13,000	52,000	.024833	.003900	....	....	
13,500	54,000	.028333	.003500	....	....	
14,000	56,000	.032500	.004167	....	....	
14,500	58,000	.036900	.004400	....	....	
15,000	60,000	.042667	.005767	....	....	
15,500	62,000	.049333	.006666	....	....	
16,000	64,000	.058333	.009000	....	....	
16,500	66,000	.0700	.011667	....	....	
17,000	68,000	.0867	.0167	....	....	
17,500	70,000	.1133	.0266	....	....	
17,760	71,040	.1600	.0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	71,040
Elastic limit per square inch of original section	do...	39,000
Elongation per inch after rupture	inch..	0.2967
Elongation per inch under strain at elastic limit	do...	.001267
Reduction in diameter at point of rupture	do...	.205
Reduction in area after rupture, per centum of original section		59.3
Position of rupture		1″.60 from neck
Character of broken surface		silky
Elongation of inch sections		″.23, ″.50*, ″.16

No. 2494.

Marks, $\frac{8\ T_{48}}{B\ T_{5}\ O}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	**Initial load.**
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000267	.000134	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000633	.000200	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.009167	0.	....	
8, 750	35, 000	.001133	.000166	....	....	
9, 000	36, 000	.001200	.000067	....	....	
9, 250	37, 000	.001233	.000033	....	....	**Elastic limit.**
9, 500	38, 000	.001400	.000167	....	....	
9, 750	39, 000	.010567	.000167	....	....	
10, 000	40, 000	.011600	.001033	....	....	
10, 500	42, 000	.014000	.002400	....	....	
11, 000	44, 000	.016833	.002833	....	....	
11, 500	46, 000	.020000	.003167	....	....	
12, 000	48, 000	.022533	.002533	....	....	
12, 500	50, 000	.026167	.003634	....	....	
13, 000	52, 000	.029900	.003733	....	....	
13, 500	54, 000	.034000	.004100	....	....	
14, 000	56, 000	.039000	.005000	....	....	
14, 500	58, 000	.044200	.005200	....	....	
15, 000	60, 000	.050667	.006467	....	....	
15, 500	62, 000	.058667	.008000	....	....	
16, 000	64, 000	.0700	.011333	....	....	
16, 500	66, 000	.0833	.0133	....	....	
17, 000	68, 000	.0967	.0134	....	....	
17,500	70, 000	.1567	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	70, 000
Elastic limit per square inch of original section	do ..	37, 000
Elongation per inch after rupture	inch..	0. 2867
Elongation per inch under strain at elastic limit	do...	.001233
Reduction in diameter at point of rupture	do...	. 194
Reduction in area after rupture, per centum of original section		57. 0
Position of rupture		1″.70 from neck
Character of broken surface		silky
Elongation of inch sections		″.21, ″.49*, ″.16

No. 2495.

Marks, $\overset{8\,T_{38}}{B\,T_{6}\,M}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000800	.000200	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	....	....	
9, 000	36, 000	.001200	.000067	....	....	Elastic limit.
9, 250	37, 000	.011333	.010133	....	....	
9, 500	38, 000	.012000	.000667	....	....	
9, 750	39, 000	.012500	.000500	....	....	
10, 000	40, 000	.013800	.001300	....	....	
10, 500	42, 000	.016333	.002533	....	....	
11, 000	44, 000	.019333	.003000	....	....	
11, 500	46, 000	.022167	.002834	....	....	
12, 000	48, 000	.025333	.003166	....	....	
12, 500	50, 000	.028500	.003167	....	....	
13, 000	52, 000	.032667	.004167	....	....	
13, 500	54, 000	.036667	.004000	....	....	
14, 000	56, 000	.041533	.004866	....	....	
14, 500	58, 000	.047333	.005800	....	....	
15, 000	60, 000	.054000	.006667	....	....	
15, 500	62, 000	.0633	.0093	....	....	
16, 000	64, 000	.0700	.0067	....	....	
16, 500	66, 000	.0867	.0167	....	....	
17, 000	68, 000	.1067	.0200	....	....	
17, 500	70, 000	.1467	.0400	....	....	
17, 590	70, 360	.1833	.0366	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	70, 360
Elastic limit per square inch of original section	do...	36, 000
Elongation per inch after rupture	inch..	0. 2567
Elongation per inch under strain at elastic limit	do ..	.001200
Reduction in diameter at point of rupture	do.,.	.135
Reduction in area after rupture, per centum of original section		41. 9
Position of rupture		1 inch from neck
Character of broken surface		silky
Elongation of inch sections		″.16, ″.26, ″.35*

No. 2496.

Marks, $\genfrac{}{}{0pt}{}{8\ T_{48}}{M\ T,\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000300	.000200	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.001000	.000200	0.	....	
8, 750	35, 000	.001167	.000167	....	....	
9, 000	36, 000	.001200	.000033	....	....	
9, 250	37, 000	.001233	.000033	....	....	
9, 500	38, 000	.001333	.000100	....	....	
9, 750	39, 000	.001367	.000034	....	....	Elastic limit.
10, 000	40, 000	.012867	.011500	....	....	
10, 500	42, 000	.013967	.001100	....	....	
11, 000	44, 000	.016400	.002433	....	....	
11, 500	46, 000	.018667	.002267	....	....	
12, 000	48, 000	.021367	.002700	....	....	
12, 500	50, 000	.024333	.002966	....	....	
13, 000	52, 000	.027667	.003334	....	....	
13, 500	54, 000	.031333	.003666	....	....	
14, 000	56, 000	.035000	.003667	....	....	
14, 500	58, 000	.038933	.003933	....	....	
15, 000	60, 000	.044667	.005734	....	....	
15, 500	62, 000	.049667	.005000	....	....	
16, 000	64, 000	.055667	.006000	....	....	
16, 500	66, 000	.0633	.007633	....	....	
17, 000	68, 000	.0733	.0100	....	....	
17, 500	70, 000	.0933	.0200	....	....	
18, 000	72, 000	.1100	.0167	....	....	
18, 500	74, 000	.1600	.0500	....	....	
18, 510	74, 040	.1733	.0133	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	74, 040
Elastic limit per square inch of original section..........do..	39, 000
Elongation per inch after rupture..........inch..	0. 2033
Elongation per inch under strain at elastic limit..........do...	.001367
Reduction in diameter at point of rupture..........do...	.094
Reduction in area after rupture, per centum of original section..........	30. 6
Position of rupture..........	1 inch from neck
Character of broken surface..........	granular; dull flaky spot at the circumference
Elongation of inch sections..........	″.14, ″.22, ″.25*

No. 2497.

Marks, $\substack{8\ \text{T}_{48} \\ \text{M}\ \text{T}_5\ \text{O}}$
Diameter, ''.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.		
2, 500	10, 000	.000333	.000166	0.		
3, 750	15, 000	.000500	.000167	0.		
5, 000	20, 000	.000700	.000200	0.		
6, 250	25, 000	.000900	.000200	0.		
7, 500	30, 000	.001033	.000133	0.		
8, 750	35, 000	.001167	.000134			
9, 000	36, 000	.001267	.000100			
9, 250	37, 000	.001333	.000066			
9, 500	38, 000	.001367	.000034			Elastic limit.
9, 750	39, 000	.001900	.000533			
10, 000	40, 000	.011400	.009500			
10, 500	42, 000	.013333	.001933			
11, 000	44, 000	.015567	.002234			
11, 500	46, 000	.018167	.002600			
12, 000	48, 000	.021000	.002833			
12, 500	50, 000	.024000	.003000			
13, 000	52, 000	.027333	.003333			
13, 500	54, 000	.030833	.003500			
14, 000	56, 000	.035333	.004500			
14, 500	58, 000	.039667	.004334			
15, 000	60, 000	.045333	.005666			
15, 500	62, 000	.053333	.008000			
16, 000	64, 000	.059667	.006334			
16, 500	66, 000	.0667	.007033			
17, 000	68, 000	.0800	.0133			
17, 500	70, 000	.0967	.0167			
18, 000	72, 000	.1333	.0366			
18, 160	72, 640	.1800	.0467			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	72, 640
Elastic limit per square inch of original section	do	38, 000
Elongation per inch after rupture	inch	0. 2800
Elongation per inch under strain at elastic limit	do	.001367
Reduction in diameter at point of rupture	do	.165
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		1''.20 from neck
Character of broken surface		silky
Elongation of inch sections		''.39, ''.26, ''.19

No. 2498.

Marks, $\overset{8\ T_{8}}{M\ T_{6}\ M}$
Diameter, ″.565.
Sectional area, .25 square inch.

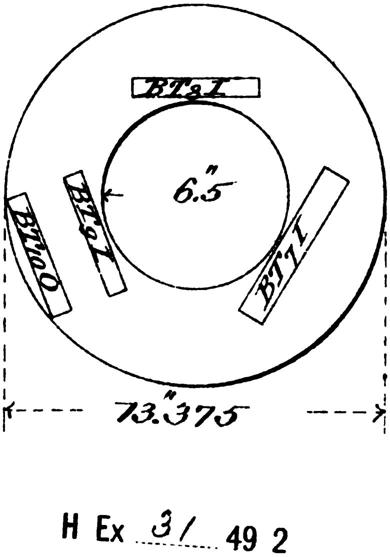
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	....	....	
2,500	10,000	.000233	.000133	....	....	
3,750	15,000	.000400	.000167	....	....	
5,000	20,000	.000567	.000167	....	....	
6,250	25,000	.000733	.000166	....	....	
7,500	30,000	.000900	.000167	....	....	
8,750	35,000	.001100	.000200	....	....	
9,000	36,000	.001167	.000067	....	....	
9,250	37,000	.001200	.000033	....	....	Elastic limit.
9,500	38,000	.001400	.000200	....	....	
9,750	39,000	.011400	.010000	....	....	
10,000	40,000	.013000	.001600	....	....	
10,500	42,000	.015167	.002167	....	....	
11,000	44,000	.017667	.002500	....	....	
11,500	46,000	.020233	.002566	....	....	
12,000	48,000	.023333	.003100	....	....	
12,500	50,000	.026333	.003000	....	....	
13,000	52,000	.030000	.003667	....	....	
13,500	54,000	.034000	.004000	....	....	
14,000	56,000	.038667	.004667	....	....	
14,500	58,000	.043333	.004666	....	....	
15,000	60,000	.049000	.005667	....	....	
15,500	62,000	.055333	.006333	....	....	
16,000	64,000	.0633	.007967	....	....	
16,500	66,000	.0733	.0100	....	....	
17,000	68,000	.0933	.0200	....	....	
17,500	70,000	.1067	.0134	....	....	
18,000	72,000	.1433	.0366	....	....	
18,100	72,400	.1800	.0367	....	....	Tensile strength.

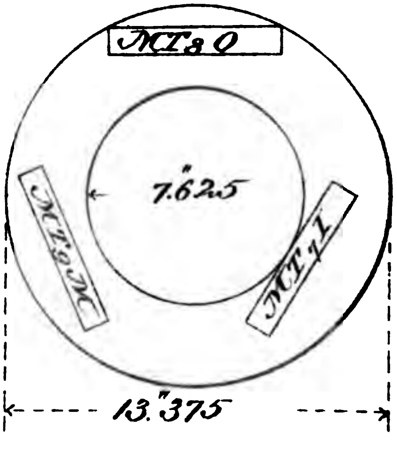
General summary.

Tensile strength per square inch of original section	pounds..	72,400
Elastic limit per square inch of original section	do...	37,000
Elongation per inch after rupture	inch..	0.2567
Elongation per inch under strain at elastic limit	do...	.001200
Reduction in diameter at point of rupture	do...	.175
Reduction in area after rupture, per centum of original section		52.2
Position of rupture		¼ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.14, ″.46*, ″.17

Tube No. 48 8" converted Rifle

Additional specimens





H Ex 31 49 2

No. 2713.

Marks, $^{8\ T_{48}}_{B\ T_7\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remrks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.		Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000500	.000200	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000800	.000133	0.	....	
7,500	30,000	.001000	.000200	0.	....	
8,750	35,000	.001133	.000133	....	....	
10,000	40,000	.001333	.000200	....	....	
10,250	41,000	.001367	.000034	....	....	
10,500	42,000	.001400	.000033	....	....	
10,750	43,000	.001400	0.	....	....	
11,000	44,000	.001467	.000067	....	....	
11,250	45,000	.001500	.000033	....	....	
11,500	46,000	.001533	.000033	....	....	
11,750	47,000	.001600	.000067	....	....	
12,000	48,000	.001667	.000067	....	....	
12,250	49,000	.001733	.000066	....	....	Elastic limit.
12,500	50,000	.005133	.003400	....	....	
12,750	51,000	.007067	.001934	....	....	
13,000	52,000	.008733	.001666	....	....	
13,500	54,000	.011667	.002934	....	....	
14,000	56,000	.013733	.002066	....	....	
14,500	58,000	.016333	.002600	....	....	
15,000	60,000	.019333	.003000	....	....	
15,500	62,000	.023033	.003700	....	....	
16,000	64,000	.025667	.002634	....	....	
16,500	66,000	.029000	.003333	....	....	
17,000	68,000	.032667	.003667	....	....	
17,500	70,000	.037667	.005000	....	....	
18,000	72,000	.0400	.002333	....	....	
18,500	74,000	.0467	.0067	....	....	
19,000	76,000	.0600	.0133	....	....	
19,500	78,000	.0667	.0067	....	....	
20,000	80,000	.0933	.0266	....	....	
20,480	81,920	.1400	.0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	81,920
Elastic limit per square inch of original section	do...	49,000
Elongation per inch after rupture	inch..	0.2167
Elongation per inch under strain at elastic limit	do...	.001733
Reduction in diameter at point of rupture	do...	.154
Reduction in area after rupture, per centum of original section		47.2
Position of rupture		″.70 from neck
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		″.36*, ″.15, ″.14

No. 2717.

Marks, $\overset{8\,T_{46}}{B\,T_{6}\,I}$

Diameter, ″.505.

Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000300	.000150	0.	....	
3,000	15,000	.000500	.000200	0.	....	
4,000	20,000	.000700	.000200	0.	....	
5,000	25,000	.000900	.000200	0.	....	
6,000	30,000	.001000	.000100	0.	....	
7,000	35,000	.001250	.000250	0.	....	
8,000	40,000	.001450	.000200	.000050	.000050	
9,000	45,000	.001600	.000150	....	....	
9,200	46,000	.001650	.000050	....	....	
9,400	47,000	.001650	0.	....	....	
9,600	48,000	.001700	.000050	....	....	
9,800	49,000	.001750	.000050	....	....	
10,000	50,000	.001800	.000050	....	....	Elastic limit.
10,200	51,000	.001950	.000150	....	....	
10,400	52,000	.005000	.003050	....	....	
10,600	53,000	.006750	.001750	....	....	
10,800	54,000	.008000	.001250	....	....	
11,000	55,000	.008750	.000750	....	....	
11,200	56,000	.010000	.001250	....	....	
11,400	57,000	.011150	.001150	....	....	
11,600	58,000	.012500	.001350	....	....	
11,800	59,000	.013600	.001100	....	....	
12,000	60,000	.014800	.001200	....	....	
12,400	62,000	.017150	.002350	....	....	
12,800	64,000	.020000	.002850	....	....	
13,200	66,000	.023000	.003000	....	....	
13,600	68,000	.026150	.003150	....	....	
14,000	70,000	.030000	.003850	....	....	
14,400	72,000	.034000	.004000	....	....	
14,800	74,000	.038000	.004000	....	....	
15,200	76,000	.043500	.005500	....	....	
15,600	78,000	.0500	.0065	....	....	
16,000	80,000	.0575	.0075	....	....	
16,400	82,000	.0650	.0075	....	....	
16,800	84,000	.1000	.0350	....	....	
16,990	84,950	.1350	.0350	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	84,950
Elastic limit per square inch of original section	do...	50,000
Elongation per inch after rupture	inch..	0.2500
Elongation per inch under strain at elastic limit	do...	.001805
Reduction in diameter at point of rupture		.159
Reduction in area after rupture, per centum of original section		51.0
Position of rupture		1 inch from neck
Character of broken surface		silky
Elongation of inch sections		″.16, ″.34

No. 2718.

Marks, $\substack{8\,T_{48} \\ B\,T_{9}\,I}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000200	.000200	0.	....	
2, 000	10, 000	.000400	.000200	0.	....	
3, 000	15, 000	.000600	.000200	0.	....	
4, 000	20, 000	.000750	.000150	0.	....	
5, 000	25, 000	.000900	.000150	0.	....	
6, 000	30, 000	.001050	.000150	0.	....	
7, 000	35, 000	.001250	.000200	.000050	.000050	
8, 000	40, 000	.001400	.000150	.000050	0.	
9, 000	45, 000	.001550	.000150	....	....	
9, 600	48, 000	.001650	.000100	....	....	
9, 800	49, 000	.001700	.000050	....	....	Elastic limit.
10, 000	50, 000	.004750	.003050	....	....	
10, 200	51, 000	.008000	.003250	....	....	
10, 400	52, 000	.009000	.001000	....	....	
10, 600	53, 000	.010200	.001200	....	....	
10, 800	54, 000	.011500	.001300	....	....	
11, 000	55, 000	.012500	.001000	....	....	
11, 200	56, 000	.013750	.001250	....	....	
11, 600	58, 000	.016050	.002300	....	....	
12, 000	60, 000	.019000	.002950	....	....	
12, 400	62, 000	.022500	.003500	....	....	
12, 800	64, 000	.025750	.003250	....	....	
13, 200	66, 000	.029000	.003250	....	....	
13, 600	68, 000	.032500	.003500	....	....	
14, 000	70, 000	.036750	.004250	....	....	
14, 400	72, 000	.042000	.005250	....	....	
14, 800	74, 000	.048750	.006750	....	....	
15, 200	76, 000	.0550	.006250	....	....	
15, 600	78, 000	.0650	.0100	....	....	
16, 000	80, 000	.0800	.0150	....	....	
16, 400	82, 000	.1100	.0300	....	....	
16, 500	82, 500	.1500	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..................................pounds.. 82, 500
Elastic limit per square inch of original section..................................do... 49, 000
Elongation per inch after rupture ....inch.. 0. 2350
Elongation per inch under strain at elastic limit.................................. do... .001700
Reduction in diameter at point of rupture..................................do .. .120
Reduction in area after rupture, per centum of original section.................................. 43. 5
Position of rupture..................................″.80 from neck
Character of broken surface..................................silky
Elongation of inch sections..................................″.30*, ″.17

No. 2719.

Marks, $\overset{8\,T_{10}}{B\,T_{10}\,O}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch*	*Inch.*	*Inch.*	
200	1,000	0.	0.	0.	0.	Initial load.
1,000	5,000	.000150	.000150	0.	....	
2,000	10,000	.000350	.000200	0.	....	
3,000	15,000	.000500	.000150	0.	....	
4,000	20,000	.000650	.000150	0.	....	
5,000	25,000	.000800	.000150	0.	....	
6,000	30,000	.000950	.000150	0.	....	
7,000	35,000	.001150	.000200	0.	....	
8,000	40,000	.001300	.000150	0.	....	
9,000	45,000	.001500	.000200	....	....	
10,000	50,000	.001700	.000200	....	....	
10,200	51,000	.001750	.000050	....	....	
10,400	52,000	.001800	.000050	....	....	
10,600	53,000	.001850	.000050	....	....	
10,800	54,000	.001900	.000050	....	....	Elastic limit.
11,000	55,000	.009000	.007100	....	....	
11,200	56,000	.010000	.001000	....	....	
11,400	57,000	.010850	.000850	....	....	
11,600	58,000	.011700	.000850	....	....	
11,800	59,000	.013050	.001350	....	....	
12,000	60,000	.014050	.001000	....	....	
12,400	62,000	.016300	.002250	....	....	
12,800	64,000	.019900	.003600	....	....	
13,200	66,000	.022500	.002600	....	....	
13,600	68,000	.025500	.003000	....	....	
14,000	70,000	.028750	.003250	....	....	
14,400	72,000	.033000	.004250	....	....	
14,800	74,000	.037000	.004000	....	....	
15,200	76,000	.042000	.005000	....	....	
15,600	78,000	.048400	.006400	....	....	
16,000	80,000	.0575	.0091	....	....	
16,400	82,000	.0650	.0075	....	....	
16,800	84,000	.1000	.0350	....	....	
17,100	85,500	.1300	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	85,500
Elastic limit per square inch of original section	do...	54,000
Elongation per inch after rupture	inch..	0.2500
Elongation per inch under strain at elastic limit	do...	.001900
Reduction in diameter at point of rupture	do...	.145
Reduction in area after rupture, per centum of original section		49.1
Position of rupture		at middle of stem
Character of broken surface		silky; opened cracks in surface of stem
Elongation of inch sections		″.24, ″.26

No. 2714.

Marks, $^{8\,T_{48}}_{M\,T_7\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000067	.000067	0.	....	
2,500	10,000	.000100	.000033	0.	....	
3,750	15,000	.000400	.000300	0.	....	
5,000	20,000	.000567	.000167	0.	....	
6,250	25,000	.000800	.000233	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	....	....	
10,000	40,000	.001300	.000167	....	....	
11,250	45,000	.001467	.000167	....	....	
11,500	46,000	.001500	.000033	....	....	
11,750	47,000	.001533	.000033	....	....	
12,000	48,000	.001567	.000034	....	....	
12,250	49,000	.001633	.000066	....	....	
12,500	50,000	.001700	.000067	....	....	
12,750	51,000	.001767	.000067	....	....	Elastic limit.
13,000	52,000	.002000	.000233	....	....	
13,250	53,000	.002300	.000300	....	....	
13,500	54,000	.003000	.000700	....	....	
13,750	55,000	.003767	.000767	....	....	
14,000	56,000	.005667	.001900	....	....	
14,500	58,000	.008567	.002900	....	....	
15,000	60,000	.011567	.003000	....	....	
15,500	62,000	.014167	.002600	....	....	
16,000	64,000	.016533	.002366	....	....	
16,500	66,000	.019000	.002467	....	....	
17,000	68,000	.021733	.002733	....	....	
17,500	70,000	.024733	.003000	....	....	
18,000	72,000	.028033	.003300	....	....	
18,500	74,000	.031767	.003734	....	....	
19,000	76,000	.0350	.003233	....	....	
19,500	78,000	.0383	.0033	....	....	
20,000	80,000	.0433	.0050	....	....	
20,500	82,000	.0600	.0167	....	....	
21,000	84,000	.0700	.0100	....	....	
21,500	86,000	.0867	.0167	....	....	
21,650	86,600	.1067	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	86,600
Elastic limit per square inch of original section	do	51,000
Elongation per inch after rupture	inch	0.1333
Elongation per inch under strain at elastic limit	do	.001767
Reduction in diameter at point of rupture	do	.0674
Reduction in area after rupture, per centum of original section		21.4
Position of rupture		″.90 from neck
Character of broken surface		granular
Elongation of inch sections		″.20*, ″.10, ″.10

No. 2719.

Marks, $\overset{8\,T_{48}}{B\,T_{18}\,O}$
Diameter, ″.505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000150	.000150	0.	....	
2, 000	10, 000	.000350	.000200	0.	....	
3, 000	15, 000	.000500	.000150	0.	....	
4, 000	20, 000	.000650	.000150	0.	....	
5, 000	25, 000	.000800	.000150	0.	....	
6, 000	30, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001150	.000200	0.	....	
8, 000	40, 000	.001300	.000150	0.	....	
9, 000	45, 000	.001500	.000200	....	....	
10, 000	50, 000	.001700	.000200	....	....	
10, 200	51, 000	.001750	.000050	....	....	
10, 400	52, 000	.001800	.000050	....	....	
10, 600	53, 000	.001850	.000050	....	....	
10, 800	54, 000	.001900	.000050	....	....	Elastic limit.
11, 000	55, 000	.009000	.007100	....	....	
11, 200	56, 000	.010000	.001000	....	....	
11, 400	57, 000	.010850	.000850	....	....	
11, 600	58, 000	.011700	.000850	....	....	
11, 800	59, 000	.013050	.001350	....	....	
12, 000	60, 000	.014050	.001000	....	....	
12, 400	62, 000	.016300	.002250	....	....	
12, 800	64, 000	.019900	.003600	....	....	
13, 200	66, 000	.022500	.002600	....	....	
13, 600	68, 000	.025500	.003000	....	....	
14, 000	70, 000	.028750	.003250	....	....	
14, 400	72, 000	.033000	.004250	....	....	
14, 800	74, 000	.037000	.004000	....	....	
15, 200	76, 000	.042000	.005000	....	....	
15, 600	78, 000	.048400	.006400	....	....	
16, 000	80, 000	.0575	.0091	....	....	
16, 400	82, 000	.0650	.0075	....	....	
16, 800	84, 000	.1000	.0350	....	....	
17, 100	85, 500	.1300	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................pounds.. 85, 500
Elastic limit per square inch of original section....................do.. 54, 000
Elongation per inch after rupture....................inch.. 0. 2500
Elongation per inch under strain at elastic limit....................do... .001900
Reduction in diameter at point of rupture....................do... .145
Reduction in area after rupture, per centum of original section.................... 49. 1
Position of rupture....................at middle of stem
Character of broken surface....................silky; opened cracks in surface of stem
Elongation of inch sections....................″.24*, ″.26*

No. 2714.

Marks, $^{8\ T_{48}}_{M\ T_7\ I}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000067	.000067	0.	....	
2,500	10,000	.000100	.000033	0.	....	
3,750	15,000	.000400	.000300	0.	....	
5,000	20,000	.000567	.000167	0.	....	
6,250	25,000	.000800	.000233	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	....	....	
10,000	40,000	.001300	.000167	....	....	
11,250	45,000	.001467	.000167	....	....	
11,500	46,000	.001500	.000033	....	....	
11,750	47,000	.001533	.000033	....	....	
12,000	48,000	.001567	.000034	....	....	
12,250	49,000	.001633	.000066	....	....	
12,500	50,000	.001700	.000067	....	....	
12,750	51,000	.001767	.000067	....	....	Elastic limit.
13,000	52,000	.002000	.000233	....	....	
13,250	53,000	.002300	.000300	....	....	
13,500	54,000	.003000	.000700	....	....	
13,750	55,000	.003767	.000767	....	....	
14,000	56,000	.005667	.001900	....	....	
14,500	58,000	.008567	.002900	....	....	
15,000	60,000	.011567	.003000	....	....	
15,500	62,000	.014167	.002600	....	....	
16,000	64,000	.016533	.002366	....	....	
16,500	66,000	.019000	.002467	....	....	
17,000	68,000	.021733	.002733	....	....	
17,500	70,000	.024733	.003000	....	....	
18,000	72,000	.028033	.003300	....	....	
18,500	74,000	.031767	.003734	....	....	
19,000	76,000	.0350	.003233	....	....	
19,500	78,000	.0383	.0033	....	....	
20,000	80,000	.0433	.0050	....	....	
20,500	82,000	.0600	.0167	....	....	
21,000	84,000	.0700	.0100	....	....	
21,500	86,000	.0867	.0167	....	....	
21,650	86,600	.1067	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	86,600
Elastic limit per square inch of original section..........do...	51,000
Elongation per inch after rupture..........inch..	0.1333
Elongation per inch under strain at elastic limit..........do...	.001767
Reduction in diameter at point of rupture..........do...	.0074
Reduction in area after rupture, per centum of original section..........	21.4
Position of rupture..........	".90 from neck
Character of broken surface..........	granular
Elongation of inch sections..........	".20*, ".10, ".10

No. 2715.

Marks, $\overset{8\ T_{48}}{M\ T_8\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000933	.000133	0.	....	
8,750	35,000	.001100	.000167	....	....	
10,000	40,000	.001267	.000167	....	....	
11,250	45,000	.001467	.000200	....	....	
11,500	46,000	.001533	.000066	....	....	
11,750	47,000	.001600	.000067	....	....	
12,000	48,000	.001633	.000033	....	....	
12,250	49,000	.001700	.000067	....	....	Elastic limit.
12,500	50,000	.002033	.000333	....	....	
12,750	51,000	.002333	.000300	....	....	
13,000	52,000	.003667	.001334	....	....	
13,250	53,000	.004667	.001000	....	....	
13,500	54,000	.006333	.001666	....	....	
14,000	56,000	.009100	.002767	....	....	
14,500	58,000	.011667	.002567	....	....	
15,000	60,000	.014000	.002333	....	....	
15,500	62,000	.016667	.002667	....	....	
16,000	64,000	.019333	.002666	....	....	
16,500	66,000	.022667	.003334	....	....	
17,000	68,000	.025667	.003000	....	....	
17,500	70,000	.028767	.003100	....	....	
18,000	72,000	.032333	.003566	....	....	
18,500	74,000	.036667	.004334	....	....	
19,000	76,000	.0400	.003333	....	....	
19,500	78,000	.0467	.0067	....	....	
20,000	80,000	.0567	.0100	....	....	
20,500	82,000	.0667	.0100	....	....	
21,000	84,000	.0900	.0233	....	....	
21,400	85,600	.1333	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	85,600
Elastic limit per square inch of original section	do...	49,000
Elongation per inch after rupture	inch..	0.1933
Elongation per inch under strain at elastic limit	do...	.001700
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44.6
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		″.10, ″.34*, ″.14

No. 2716.

Marks, $\overset{8\ \mathrm{T_{46}}}{\mathrm{M\ T, M}}$
Diameter, ″.560.
Sectional area, .246 square inch.

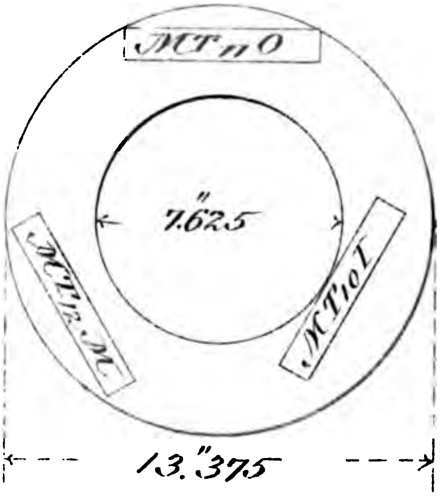
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
246	1, 000	0.	0.	0.	0.	Initial load.
1, 230	5, 000	.000133	.000133	0.	....	
2, 460	10, 000	.000267	.000134	0.	....	
3, 690	15, 000	.000467	.000200	0.	....	
4, 920	20, 000	.000667	.000200	0.	....	
6, 150	25, 000	.000867	.000200	0.	....	
7, 380	30, 000	.001033	.000166	0.	....	
8, 610	35, 000	.001133	.000100	....	....	
9, 840	40, 000	.001367	.000234	....	....	
11, 070	45, 000	.001533	.000166	....	....	
11, 316	46, 000	.001600	.000067	....	....	
11, 562	47, 000	.001667	.000067	....	....	
11, 808	48, 000	.001700	.000033	....	....	
12, 054	49, 000	.001767	.000067	....	....	
12, 300	50, 000	.001833	.000066	....	....	Elastic limit.
12, 546	51, 000	.002033	.000200	....	....	
12, 792	52, 000	.002433	.000400	....	....	
13, 038	53, 000	.003433	.001000	....	....	
13, 284	54, 000	.004900	.001467	....	....	
13, 776	56, 000	.007067	.002167	....	....	
14, 268	58, 000	.009733	.002666	....	....	
14, 760	60, 000	.012100	.002367	....	....	
15, 252	62, 000	.014667	.002567	....	....	
15, 744	64, 000	.017067	.002400	....	....	
16, 236	66, 000	.019500	.002433	....	....	
16, 728	68, 000	.022800	.003300	....	....	
17, 220	70, 000	.025600	.002800	....	....	
17, 712	72, 000	.028333	.002733	....	....	
18, 204	74, 000	.032333	.004000	....	....	
18, 696	76, 000	.0367	.004367	....	....	
19, 188	78, 000	.0400	.0033	....	....	
19, 680	80, 000	.0467	.0067	....	....	
20, 172	82, 000	.0567	.0100	....	....	
20, 664	84, 000	.0667	.0100	....	....	
21, 156	86, 000	.0767	.0100	....	....	
21, 648	88, 000	.1067	.0300	....	....	
21, 700	88, 210	.1300	.0233	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	88, 210
Elastic limit per square inch of original section	do...	50, 000
Elongation per inch after rupture	inch..	0. 2133
Elongation per inch under strain at elastic limit	do...	.001833
Reduction in diameter at point of rupture	do...	.114
Reduction in area after rupture, per centum of original section		46. 3
Position of rupture		1¼ inches from neck; oblique
Character of broken surface		silky
Elongation of inch sections		″.09, ″.22*, ″.23*

Tube No. 48 8" converted Rifle

Additional specimens



No. 2735.

Marks, $^{8\,\text{Cn}\,\text{R}_4,\,\text{T}}_{\text{M}\,\text{T}_1,\,\text{I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000267	.000167	0.	....	
3, 750	15, 000	.000400	.000133	0.	....	
5, 000	20, 000	.000567	.000167	0.	....	
6, 250	25, 000	.000700	.000133	0.	....	
7, 500	30, 000	.000867	.000167	0.	....	
8, 750	35, 000	.001033	.000166	—.000033	—.000033	
10, 000	40, 000	.001200	.000167	....	....	
10, 250	41, 000	.001233	.000033	....	....	Elastic limit.
10, 500	42, 000	.001367	.000134	....	....	
10, 750	43, 000	.001433	.000066	....	....	
11, 000	44, 000	.001533	.000100	....	....	
11, 250	45, 000	.001700	.000167	....	....	
11, 500	46, 000	.002400	.000700	....	....	
11, 750	47, 000	.003500	.001100	....	....	
12, 000	48, 000	.005000	.001500	....	....	
12, 250	49, 000	.006500	.001500	....	....	
12, 500	50, 000	.007500	.001000	....	....	
13, 000	52, 000	.010000	.002500	....	....	
13, 500	54, 000	.012500	.002500	....	....	
14, 000	56, 000	.014667	.002167	....	....	
14, 500	58, 000	.017167	.002500	....	....	
15, 000	60, 000	.020000	.002833	....	....	
15, 500	62, 000	.023000	.003000	....	....	
16, 000	64, 000	.026200	.003200	....	....	
16, 500	66, 000	.030000	.003800	....	....	
17, 000	68, 000	.034333	.004333	....	....	
17, 500	70, 000	.038667	.004334	....	....	
18, 000	72, 000	.0433	.004633	....	....	
18, 500	74, 000	.0533	.0100	....	....	
19, 000	76, 000	.0600	.0067	....	....	
19, 500	78, 000	.0733	.0133	....	....	
20, 000	80, 000	.1000	.0267	....	....	
20, 050	80, 200	.1333	.0333	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80, 200
Elastic limit per square inch of original section	do...	41, 000
Elongation per inch after rupture	inch..	0. 2000
Elongation per inch under strain at elastic limit	do...	.001233
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section		52. 2
Position of rupture		1 inch from neck
Character of broken surface		silky
Elongation of inch sections		″.36*, ″.16, ″.08

No. 2736.

Marks, $\genfrac{}{}{0pt}{}{8\,\mathrm{Cn\,Ra\,T}}{\mathrm{M\,T_{11}\,O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1. 250	5, 000	. 000100	. 000100	0.	....	
2, 500	10, 000	. 000267	. 000167	0.	....	
3, 750	15, 000	. 000467	. 000200	0.	....	
5, 000	20, 000	. 000633	. 000166	0.	....	
6, 250	25, 000	. 000767	. 000134	0.	....	
7, 500	30, 000	. 000933	. 000166	0.	....	
8, 750	35, 000	. 001100	. 000167	0.	....	
10, 000	40, 000	. 001367	. 000267	....	....	
10, 250	41, 000	. 001400	. 000033	....	....	
10, 500	42, 000	. 001433	. 000033	....	....	Elastic limit.
10, 750	43, 000	. 002000	. 000567	....	....	
11, 000	44, 000	. 004333	. 002333	....	....	
11, 250	45, 000	. 006000	. 001667	....	....	
11, 500	46, 000	. 007067	. 001067	....	....	
11, 750	47, 000	. 008333	. 001266	....	....	
12, 000	48, 000	. 009333	. 001000	....	....	
12, 250	49, 000	. 010333	. 001000	....	....	
12, 500	50, 000	. 011000	. 000667	....	....	
13, 000	52, 000	. 013333	. 002333	....	....	
13, 500	54, 000	. 016333	. 003000	....	....	
14, 000	56, 000	. 019000	. 002667	....	....	
14, 500	58, 000	. 022000	. 003000	....	....	
15, 000	60, 000	. 025200	. 003200	....	....	
15, 500	62, 000	. 028333	. 003133	....	....	
16, 000	64, 000	. 032333	. 004000	....	....	
16, 500	66, 000	. 036333	. 004000	....	....	
17, 000	68, 000	. 041333	. 005000	....	....	
17, 500	70, 000	. 0467	. 005367	....	....	
18, 000	72, 000	. 0567	. 0100	....	....	
18, 500	74, 000	. 0633	. 0066	....	....	
19, 000	76, 000	. 0800	. 0167	....	....	
19, 000	78, 000	. 1067	. 0267	....	....	
19, 680	78, 720	. 1667	. 0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	78, 720
Elastic limit per square inch of original section	do..	42, 000
Elongation per inch after rupture	inch..	0. 2567
Elongation per inch under strain at elastic limit	do...	. 001433
Reduction in diameter at point of rupture	do...	. 164
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		1″. 60 from neck
Character of broken surface		silky
Elongation of inch sections		″. 15, ″. 40*, ″. 22

No. 2737.

Marks, $^{8\,\mathrm{Cn}\,\mathrm{R}_{18}\,\mathrm{T}}_{\mathrm{M}\,\mathrm{T}_{12}\,\mathrm{M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000333	.000166	0.	....	
3,750	15,000	.000500	.000167	0.	....	
5,000	20,000	.000667	.000167	0.	....	
6,250	25,000	.000867	.000200	0.	....	
7,500	30,000	.001033	.000166	0.	....	
8,750	35,000	.001200	.000167	.000033	.000033	
9,000	36,000	.001267	.000067	....	....	
9,250	37,000	.001300	.000033	....	....	
9,500	38,000	.001367	.000067	....	....	
9,750	39,000	.001400	.000033	....	....	
10,000	40,000	.001467	.000067	....	....	
10,250	41,000	.001533	.000066	....	....	
10,500	42,000	.001600	.000067	....	....	Elastic limit
10,750	43,000	.001700	.000100	....	....	
11,000	44,000	.001867	.000167	....	....	
11,250	45,000	.002233	.000366	....	....	
11,500	46,000	.003167	.000934	....	....	
11,750	47,000	.004533	.001366	....	....	
12,000	48,000	.006067	.001534	....	....	
12,250	49,000	.006900	.000833	....	....	
12,500	50,000	.008267	.001367	....	....	
13,000	52,000	.010567	.002300	....	....	
13,500	54,000	.012667	.002100	....	....	
14,000	56,000	.014833	.002166	....	....	
14,500	58,000	.017333	.002500	....	....	
15,000	60,000	.020000	.002667	....	....	
15,500	62,000	.022667	.002667	....	....	
16,000	64,000	.025667	.003000	....	....	
16,500	66,000	.029000	.003333	....	....	
17,000	68,000	.032667	.003667	....	....	
17,500	70,000	.036667	.004000	....	....	
18,000	72,000	.041500	.004833	....	....	
18,500	74,000	.0467	.0052	....	....	
19,000	76,000	.0567	.0100	....	....	
19,500	78,000	.0667	.0100	....	....	
20,000	80,000	.0767	.0100	....	....	
20,500	82,000	.1100	.0333	....	....	
20,540	82,160	.1400	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	82,160
Elastic limit per square inch of original section	do ..	42,000
Elongation per inch after rupture	inch..	0.2267
Elongation per inch under strain at elastic limit	do...	.001600
Reduction in diameter at point of rupture	do...	.114
Reduction in area after rupture, per centum of original section		36.4
Position of rupture		at middle of stem

Character of broken surface, granular, 60 per centum; silky, 40 per centum; opened cracks in surface of stem.

Elongation of inch sections..″.18, ″.35*, ″.20

No. 2140.

Marks, $\overset{8\ T_{48}}{B\ T_1\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000233	.000100	0.	....	
3,750	15,000	.000433	.000200	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	0.	....	
9,000	36,000	.001167	.000067	....	....	Elastic limit.
9,250	37,000	.002133	.000966	....	....	
9,500	38,000	.003433	.001300	....	....	
9,750	39,000	.004600	.001167	....	....	
10,000	40,000	.006900	.002300	....	....	
10,250	41,000	.008767	.001867	....	....	
10,500	42,000	.009667	.000900	....	....	
10,750	43,000	.010767	.001100	....	....	
11,000	44,000	.011767	.001000	....	....	
11,250	45,000	.012900	.001133	....	....	
11,500	46,000	.014667	.001767	....	....	
11,750	47,000	.015667	.001000	....	....	
12,000	48,000	.017067	.001400	....	....	
12,250	49,000	.018267	.001200	....	....	
12,500	50,000	.020100	.001833	....	....	
13,000	52,000	.023200	.003100	....	....	
13,500	54,000	.027067	.003867	....	....	
14,000	56,000	.030833	.003766	....	....	
14,500	58,000	.035000	.004167	....	....	
15,000	60,000	.040333	.005333	....	....	
15,500	62,000	.046000	.005667	....	....	
16,000	64,000	.055667	.009667	....	....	
16,500	66,000	.063333	.007666	....	....	
17,000	68,000	.078333	.015000	....	....	
17,500	70,000	.1000	.021667	....	....	
17,800	71,200	.1433	.0433	....	....	Tensile strength.

General summary.

Specific gravity		7.8598
Hardness		10.60
Tensile strength per square inch of original section	pounds..	71,200
Elastic limit per square inch of original section	do...	36,000
Elongation per inch after rupture	inch..	0.2067
Elongation per inch under strain at elastic limit	do...	.001167
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		″.55 from neck
Character of broken surface		silky
Elongation of inch sections		″.39*, ″.13, ″.10

No. 2141.

Marks, $^{8\,T}_{B\,T,\,O}$
Diameter, ''.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000233	.000100	0.	....	
3, 750	15, 000	.000400	.000167	0.	....	
5, 000	20, 000	.000567	.000167	0.	....	
6, 250	25, 000	.000733	.000166	0.	....	
7, 500	30, 000	.000900	.000167	0.	....	
8, 750	35, 000	.001133	.000233	.000100	.000100	Elastic limit.
9, 000	36, 000	.003267	.002134	....	....	
9, 250	37, 000	.006000	.002733	....	....	
9, 500	38, 000	.007600	.001600	....	....	
9, 750	39, 000	.008667	.001067	....	....	
10, 000	40, 000	.009833	.001166	....	....	
10, 250	41, 000	.010933	.001100	....	....	
10, 500	42, 000	.012133	.001200	....	....	
10, 750	43, 000	.013133	.001000	....	....	
11, 000	44, 000	.014267	.001134	....	....	
11, 250	45, 000	.015667	.001400	....	....	
11, 500	46, 000	.016600	.000933	....	....	
11, 750	47, 000	.018067	.001467	....	....	
12, 000	48, 000	.019933	.001866	....	....	
12, 250	49, 000	.020933	.001000	....	....	
12, 500	50, 000	.022600	.001667	....	....	
12, 750	51, 000	.024100	.001500	....	....	
13, 000	52, 000	.026167	.002067	....	....	
13, 250	53, 000	.028000	.001833	....	....	
13, 500	54, 000	.030000	.002000	....	....	
13, 750	55, 000	.032000	.002000	....	....	
14, 000	56, 000	.033900	.001900	....	....	
14, 250	57, 000	.035833	.001933	....	....	
14, 500	58, 000	.038667	.002834	....	....	
14, 750	59, 000	.041167	.002500	....	....	
15, 000	60, 000	.044233	.003066	....	....	
15, 500	62, 000	.051667	.007434	....	....	
16, 000	64, 000	.058833	.007166	....	....	
16, 500	66, 000	.068667	.009834	....	....	
17, 000	68, 000	.0867	.018033	....	....	
17, 500	70, 000	.1100	.0233	....	....	
17, 900	71, 600	.1733	.0633	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	71, 600
Elastic limit per square inch of original section	do...	35, 000
Elongation per inch after rupture	inch..	0. 2667
Elongation per inch under strain at elastic limit	do...	.001133
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		⅜ inch from middle of stem
Character of broken surface		silky; trace of granulation
Elongation of inch sections		''.23, ''.42*, ''.15

No. 2142.

Marks, $^{8\,T_4}_{B\,T_3}M$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	—.000033	—.000033	
2, 500	10, 000	.000200	.000100	—.000033	0.	
3, 750	15, 000	.000367	.000167	—.000033	0.	
5, 000	20, 000	.000533	.000166	—.000033	0.	
6, 250	25, 000	.000700	.000167	—.000033	0.	
7, 500	30, 000	.000867	.000167	—.000033	0.	
8, 750	35, 000	.001000	.000133	—.000033	0.	
9, 000	36, 000	.001033	.000033	....	....	
9, 250	37, 000	.001067	.000034	....	....	
9, 500	38, 000	.001133	.000066	....	....	
9, 750	39, 000	.001133	0.	....	....	
10, 000	40, 000	.001200	.000067	—.000033	0.	
10, 250	41, 000	.001233	.000033	....	....	
10, 500	42, 000	.001333	.000100	....	....	
10, 750	43, 000	.001400	.000067	....	....	Elastic limit.
11, 000	44, 000	.004500	.003100	....	....	
11, 250	45, 000	.005733	.001233	....	....	
11, 500	46, 000	.007400	.001667	....	....	
11, 750	47, 000	.008267	.000867	....	....	
12, 000	48, 000	.009333	.001066	....	....	
12, 250	49, 000	.010000	.000667	....	....	
12, 500	50, 000	.011500	.001500	....	....	
12, 750	51, 000	.012800	.001300	....	....	
13, 000	52, 000	.014000	.001200	....	....	
13, 250	53, 000	.015000	.001000	....	....	
13, 500	54, 000	.016167	.001167	....	....	
13, 750	55, 000	.017500	.001333	....	....	
14, 000	56, 000	.018933	.001433	....	....	
14, 250	57, 000	.020333	.001400	....	....	
14, 500	58, 000	.022167	.001834	....	....	
14, 750	59, 000	.023667	.001500	....	....	
15, 000	60, 000	.025333	.001666	....	....	
15, 500	62, 000	.028833	.003500	....	....	
16, 000	64, 000	.032667	.003834	....	....	
16, 500	66, 000	.037333	.004666	....	....	
17, 000	68, 000	.043000	.005667	....	....	
17, 500	70, 000	.049500	.006500	....	....	
18, 000	72, 000	.056667	.007167	....	....	
18, 500	74, 000	.0667	.010033	....	....	
19, 000	76, 000	.0867	.0200	....	....	
19, 500	78, 000	.1167	.0300	....	....	
19, 580	78, 320	.1467	.0300	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	78, 320
Elastic limit per square inch of original section	do...	43, 000
Elongation per inch after rupture	inch..	0. 2500
Elongation per inch under strain at elastic limit	do...	.001400
Reduction in diameter at point of rupture	do...	.165
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		at middle of stem
Character of broken surface		silky
Elongation of inch sections		″.17, ″.42*, ″.16

No. 2143.

Marks, $\overset{8\,T_4,}{M\,T_1}$ I
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000267	.000134	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000967	.000200	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
9, 000	36, 000	.001167	.000034	....	....	
9, 250	37, 000	.001233	.000066	....	....	Elastic limit.
9, 500	38, 000	.001433	.000200	....	....	
9, 750	39, 000	.004300	.002867	....	....	
10, 000	40, 000	.007333	.003033	....	....	
10, 250	41. 000	.008200	.000867	....	....	
10, 500	42, 000	.009533	.001333	....	....	
10, 750	43, 000	.010333	.000800	....	....	
11, 000	44, 000	.011367	.001034	....	....	
11, 250	45, 000	.012267	.000900	....	....	
11, 500	46, 000	.013333	.001066	....	....	
11, 750	47, 000	.014167	.000834	....	....	
12, 000	48, 000	.015333	.001166	....	....	
12, 250	49, 000	.017000	.001667	....	....	
12, 500	50, 000	.018333	.001333	....	....	
13, 000	52, 000	.020000	.001667	....	....	
13, 500	54, 000	.023000	.003000	....	....	
14, 000	56, 000	.026500	.003500	....	....	
14, 500	58, 000	.031333	.004833	....	....	
15, 000	60, 000	.034500	.003167	....	....	
15, 500	62, 000	.037833	.003333	....	....	
16, 000	64, 000	.042667	.004834	....	....	
16, 500	66, 000	.049333	.006666	....	....	
17, 000	68, 000	.0567	.007367	....	....	
17, 500	70, 000	.0667	.0100	....	....	
18, 000	72, 000	.0767	.0100	....	....	
18, 500	74, 000	.1033	.0266	....	....	
18, 890	75, 560	.1600	.0567	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	75, 560
Elastic limit per square inch of original section	do...	37, 000
Elongation per inch after rupture	inch..	0. 2667
Elongation per inch under strain at elastic limit	do...	.001233
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section		52. 2
Position of rupture		½ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.46, ″.23, ″.11

No. 2144.

Marks, $^{8\ T_{49}}_{M\ T_2\ O}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	. 000133	. 000133	0.		
2, 500	10, 000	. 000300	. 000167	0.		
3, 750	15, 000	. 000467	. 000167	0.		
5, 000	20. 000	. 000633	. 000166	0.		
6, 250	25, 000	. 000800	. 000167	0.		
7, 500	30, 000	. 000967	. 000167	0.		
8, 750	35, 000	. 001100	. 000133	0.		
9, 000	36, 000	. 001133	. 000033			
9, 250	37, 000	. 001167	. 000034			
9, 500	38, 000	. 001200	. 000033			
9, 750	39. 000	. 001233	. 000033			
10, 000	40, 000	. 001300	. 000067	0.		
10, 250	41, 000	. 001333	. 000033			
10, 500	42, 000	. 001367	. 000034			
10, 750	43, 000	. 001400	. 000033			Elastic limit.
11, 000	44, 000	. 004900	. 003500			
11, 250	45, 000	. 005600	. 000700			
11, 500	46, 000	. 006900	. 001300			
11, 750	47, 000	. 008233	. 001333			
12, 000	48, 000	. 009333	. 001100			
12, 250	49, 000	. 010033	. 000700			
12, 500	50, 000	. 011067	. 001034			
12, 750	51, 000	. 012067	. 001000			
13, 000	52, 000	. 013367	. 001300			
13, 250	53, 000	. 014600	. 001233			
13, 500	54, 000	. 015600	. 001000			
13, 750	55, 000	. 016600	. 001000			
14, 000	56, 000	. 018033	. 001433			
14, 250	57, 000	. 019667	. 001634			
14, 500	58, 000	. 021167	. 001500			
14, 750	59, 000	. 022167	. 001000			
15, 000	60, 000	. 024333	. 002166			
15, 500	62, 000	. 027333	. 003000			
16, 000	64, 000	. 030833	. 003500			
16, 500	66, 000	. 035000	. 004167			
17, 000	68, 000	. 040000	. 005000			
17, 500	70, 000	. 045000	. 005000			
18, 000	72, 000	. 051667	. 006667			
18, 500	74, 000	. 059333	. 007666			
19, 000	76, 000	. 0700	. 010667			
19, 500	78, 000	. 0900	. 0200			
20, 000	80, 000	. 1433	. 0533			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80, 000
Elastic limit per square inch of original section	do...	43, 000
Elongation per inch after rupture	inch..	0. 2000
Elongation per inch under strain at elastic limit	do...	. 001400
Reduction in diameter at point of rupture	do...	. 095
Reduction in area after rupture, per centum of original section		30. 6
Position of rupture		¾ inch from neck
Character of broken surface, granular, 60 per centum; dull silky, 40 per centum; opened cracks in surface of stem.		
Elongation of inch sections		″.24*, ″.16, ″.20

No. 2145.

Marks, $\overset{8}{\mathrm{M}}\,\overset{\mathrm{T}_{49}}{\mathrm{T},\mathrm{M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.		
2, 500	10, 000	.000300	.000167	0.		
3, 750	15, 000	.000467	.000167	0.		
5, 000	20, 000	.000633	.000166	0.		
6, 250	25, 000	.000800	.000167	0.		
7, 500	30, 000	.000967	.000167	0.		
8, 750	35, 000	.001100	.000133			
9, 000	36, 000	.001167	.000067			Elastic limit.
9, 250	37, 000	.001300	.000133			
9, 500	38, 000	.004833	.003533			
9, 750	39, 000	.005833	.001000			
10, 000	40, 000	.007500	.001667			
10, 250	41, 000	.008833	.001333			
10, 500	42, 000	.009833	.001000			
10, 750	43, 000	.010667	.000834			
11, 000	44, 000	.011667	.001000			
11, 250	45, 000	.012700	.001033			
11, 500	46, 000	.014000	.001300			
11, 750	47, 000	.014933	.000933			
12, 000	48, 000	.016467	.001534			
12, 250	49, 000	.017667	.001200			
12, 500	50, 000	.019167	.001500			
12, 750	51, 000	.020600	.001433			
13, 000	52, 000	.021667	.001067			
13, 250	53, 000	.023067	.001400			
13, 500	54, 000	.024833	.001766			
13, 750	55, 000	.026367	.001534			
14, 000	56, 000	.028600	.002233			
14, 250	57, 000	.030167	.001567			
14, 500	58, 000	.032000	.001233			
14, 750	59, 000	.034000	.002000			
15, 000	60, 000	.037000	.003000			
15, 500	62, 000	.042167	.005167			
16, 000	64, 000	.048000	.005833			
16, 500	66, 000	.055833	.007833			
17, 000	68, 000	.063333	.007500			
17, 500	70, 000	.075000	.011667			
18, 000	72, 000	.1000	.0250			
18, 420	73, 680	.1433	.0433			Tensile strength.

General summary.

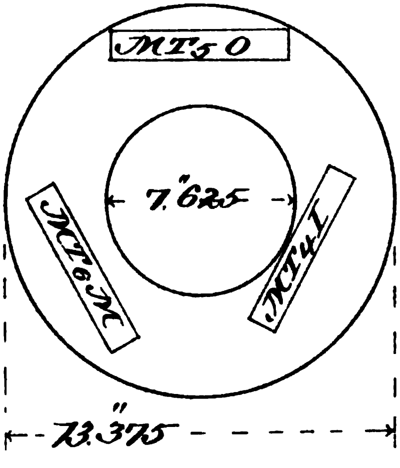
Tensile strength per square inch of original section	pounds..	73, 680
Elastic limit per square inch of original section	do...	36, 000
Elongation per inch after rupture	inch..	0. 1933
Elongation per inch under strain at elastic limit	do...	.001167
Reduction in diameter at point of rupture	do ..	.114
Reduction in area after rupture, per centum of original section		36. 4
Position of rupture		″.70 from neck

Character of broken surface, granular, 80 per centum; dull silky, 20 per centum; opened cracks in surface of stem.

Elongation of inch sections .... ″.33*, ″.15, ″.10

Tube No. 49 8″ converted Rifle

Additional specimens



No. 2371.

Marks, $\genfrac{}{}{0pt}{}{8\,T_{40}}{M\,T_{4}\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000467	.000167	0.	....	
5, 000	20, 000	.000667	.000200	0.	....	
6, 250	25, 000	.000833	.000166	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
8, 750	35, 000	.001167	.000167	0.	....	
10, 000	40, 000	.001367	.000200	0.	....	
10, 250	41, 000	.001433	.000066	....	....	Elastic limit.
10, 500	42, 000	.001767 .002167	.000334 .000400	....	....	
10, 750	43, 000	.002767	.000600	....	....	
11, 000	44, 000	.005033	.002266	....	....	
11, 250	45, 000	.006333	.001300	....	....	
11, 500	46, 000	.007867	.001534	....	....	
11, 750	47, 000	.008400	.000533	....	....	
12, 000	48, 000	.010000	.001600	....	....	
12, 250	49, 000	.011000	.001000	....	....	
12, 500	50, 000	.012067	.001067	....	....	
13, 000	52, 000	.014333	.002266	....	....	
13, 500	54, 000	.017233	.002900	....	....	
14, 000	56, 000	.019867	.002634	....	....	
14, 500	58, 000	.022667	.002800	....	....	
15, 000	60, 000	.025733	.003066	....	....	
15, 500	62, 000	.029500	.003767	....	....	
16, 000	64, 000	.033000	.003500	....	....	
16, 500	66, 000	.037333	.004333	....	....	
17, 000	68, 000	.042667	.005334	....	....	
17, 500	70, 000	.048833	.006166	....	....	
18, 000	72, 000	.056200	.007367	....	....	
18, 500	74, 000	.066167	.009967	....	....	
19, 000	76, 000	.0833	.017133	....	....	
19, 500	78, 000	.1067	.0234	....	....	
19, 660	78, 640	.1500	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section........pounds..	78, 640
Elastic limit per square inch of original section........do...	41, 000
Elongation per inch after rupture........inch..	0. 2233
Elongation per inch under strain at elastic limit........do...	.001433
Reduction in diameter at point of rupture........do...	.134
Reduction in area after rupture, per centum of original section........	41. 9
Position of rupture........	1 inch from neck
Character of broken surface........	granular; dull spot at circumference
Diameter, ″.10 from point of rupture........	″.41
Elongation of inch sections........	″.38*, ″.17, ″.12

No. 2372.

Marks, $^{8\,T..}_{M\,T.\,O}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000433	.000133	0.	....	
5,000	20,000	.000633	.000200	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001167	.000200	0.	....	
9,000	36,000	.001200	.000033	....	....	
9,250	37,000	.001267	.000067	....	....	Elastic limit.
9,500	38,000	.007733	.006466	....	....	
9,750	39,000	.008333	.000600	....	....	
10,000	40,000	.009333	.001000	....	....	
10,250	41,000	.010333	.001000	....	....	
10,500	42,000	.011500	.001167	....	....	
10,750	43,000	.012333	.000833	....	....	
11,000	44,000	.013633	.001300	....	....	
11,250	45,000	.014667	.001034	....	....	
11,500	46,000	.016067	.001400	....	....	
11,750	47,000	.017167	.001100	....	....	
12,000	48,000	.018667	.001500	....	....	
12,250	49,000	.019667	.001000	....	....	
12,500	50,000	.021167	.001500	....	....	
13,000	52,000	.024000	.002833	....	....	
13,500	54,000	.027667	.003667	....	....	
14,000	56,000	.031333	.003666	....	....	
14,500	58,000	.035333	.004000	....	....	
15,000	60,000	.040333	.005000	....	....	
15,500	62,000	.045667	.005334	....	....	
16,000	64,000	.052333	.006666	....	....	
16,500	66,000	.061333	.009000	....	....	
17,000	68,000	.0733	.011967	....	....	
17,500	70,000	.0867	.0134	....	....	
18,000	72,000	.1067	.0200	....	....	
18,480	73,920	.1733	.0666	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds.. 73,920
Elastic limit per square inch of original section..........do... 37,000
Elongation per inch after rupture..........inch.. 0.2167
Elongation per inch under strain at elastic limit..........do .. .001267
Reduction in diameter at point of rupture..........do... .084
Reduction in area after rupture, per centum of original section.......... 27.6
Position of rupture..........".83 from neck
Character of broken surface, granular, 80 per centum; dull silky, 20 per centum; opened cracks in surface of stem.
Elongation of inch sections..........".15, ".20, ".30*

No. 2373.

Marks, $\overset{8\ T_{\infty}}{M\ T_6\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.		Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000400	.000133	0.	....	
5,000	20,000	.000533	.000133	0.	....	
6,250	25,000	.000700	.000167	0.	....	
7,500	30,000	.000867	.000167	0.	....	
8,750	35,000	.001033	.000166	0.	....	
9,000	36,000	.001067	.000034	....	....	
9,250	37,000	.001100	.000033	....	....	
9,500	38,000	.001133	.000033	....	....	
9,750	39,000	.001200	.000067	....	....	
10,000	40,000	.001267	.000067	.000067	.000067	Elastic limit.
10,250	41,000	.002600	.001333	....	....	
10,500	42,000	.004000	.001400	....	....	
10,750	43,000	.005000	.001000	....	....	
11,000	44,000	.006333	.001333	....	....	
11,250	45,000	.007333	.001000	....	....	
11,500	46,000	.008333	.001000	....	....	
11,750	47,000	.009500	.001167	....	....	
12,000	48,000	.010500	.001000	....	....	
12,250	49,000	.011667	.001167	....	....	
12,500	50,000	.012833	.001166	....	....	
13,000	52,000	.014833	.002000	....	....	
13,500	54,000	.017333	.002500	....	....	
14,000	56,000	.019667	.002334	....	....	
14,500	58,000	.022833	.003166	....	....	
15,000	60,000	.026000	.003167	....	....	
15,500	62,000	.029333	.003333	....	....	
16,000	64,000	.033000	.003667	....	....	
16,500	66,000	.037333	.004333	....	....	
17,000	68,000	.042333	.005000	....	....	
17,500	70,000	.048333	.006000	....	....	
18,000	72,000	.056667	.008334	....	....	
18,500	74,000	.0667	.010033	....	....	
19,000	76,000	.0833	.0166	....	....	
19,500	78,000	.1067	.0234	....	....	
19,720	78,880	.1600	.0533	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	78,880
Elastic limit per square inch of original section..........do...	40,000
Elongation per inch after rupture..........inch..	0.2067
Elongation per inch under strain at elastic limit..........do...	.001267
Reduction in diameter at point of rupture..........do...	.094
Reduction in area after rupture, per centum of original section..........	30.6
Position of rupture..........	1″.10 from neck
Character of broken surface, granular; dull spot at circumference; opened small cracks in surface of stem.	
Elongation of inch sections..........	″.24, ″.22, ″.16

No. 2175.

Marks, $\overset{8\,T_{9}}{B\,T}$, I
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	6, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000433	.000133	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000900	.000133	0.	....	
8, 750	35, 000	.001033	.000133	0.	....	
9, 000	36, 000	.001100	.000067	....	....	
9, 250	37, 000	.001133	.000033	....	....	
9, 500	38, 000	.001167	.000034	....	....	
9, 750	39, 000	.001233	.000066	....	....	Elastic limit.
10, 000	40, 000	.002600	.001367	....	....	
10, 250	41, 000	.003833	.001233	....	....	
10, 500	42, 000	.005700	.001867	....	....	
10, 750	43, 000	.006833	.001133	....	....	
11, 000	44, 000	.008167	.001334	....	....	
11, 250	45, 000	.009333	.001166	....	....	
11, 500	46, 000	.010500	.001167	....	....	
11, 750	47, 000	.011500	.001000	....	....	
12, 000	48, 000	.012833	.001333	....	....	
12, 250	49, 000	.014000	.001167	....	....	
12, 500	50, 000	.015333	.001333	....	....	
12, 750	51, 000	.016700	.001367	....	....	
13, 000	52, 000	.018067	.001367	....	....	
13, 250	53, 000	.020000	.001933	....	....	
13, 500	54, 000	.021667	.001667	....	....	
13, 750	55, 000	.023333	.001666	....	....	
14, 000	56, 000	.025333	.002000	....	....	
14, 250	57, 000	.026667	.001334	....	....	
14, 500	58, 000	.028333	.001666	....	....	
14, 750	59, 000	.030333	.002000	....	....	
15, 000	60, 000	.032367	.002034	....	....	
15, 500	62, 000	.036833	.004466	....	....	
16, 000	64, 000	.042167	.005334	....	....	
16, 500	66, 000	.049000	.006833	....	....	
17, 000	68, 000	.057333	.008333	....	....	
17, 500	70, 000	.0667	.009367	....	....	
18, 000	72, 000	.0867	.0200	....	....	
18, 500	74, 000	.1233	.0366	....	....	
18, 550	74, 200	.1500	.0267	....	....	Tensile strength.

General summary.

Specific gravity	inch..	7.8584
Hardness		12. 72
Tensile strength per square inch of original section	pounds..	74, 200
Elastic limit per square inch of original section	do...	39, 000
Elongation per inch after rupture	inch..	0. 2367
Elongation per inch under strain at elastic limit	do...	.001233
Reduction in diameter at point of rupture	do...	.164
Reduction in area after rupture, per centum of original section		49. 7
Position of rupture		¼ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.37, ″.22, ″.12

No. 2176.

Marks, $^{8\,T_{50}}_{B\,T_{2}\,O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000267	.000134	0.	....	
3, 750	15, 000	.000400	.000133	0.	....	
5, 000	20, 000	.000533	.000133	0.	....	
6, 250	25, 000	.000700	.000167	0.	....	
7, 500	30, 000	.000867	.000167	0.	....	
8, 750	35, 000	.001033	.000166	0.	....	
9, 000	36, 000	.001067	.000034	....	....	
9, 250	37, 000	.001200	.000133	....	....	
9, 500	38, 000	.001233	.000033	....	....	
9, 750	39, 000	.001267	.000034	....	....	Elastic limit.
10, 000	40, 000	.002600	.001333	....	....	
10, 250	41, 000	.004667	.002067	....	....	
10, 500	42, 000	.006233	.001566	....	....	
10, 750	43, 000	.007467	.001234	....	....	
11, 000	44, 000	.008667	.001200	....	....	
11, 250	45, 000	.009567	.000900	....	....	
11, 500	46, 000	.010733	.001166	....	....	
11, 750	47, 000	.012000	.001267	....	....	
12, 000	48, 000	.013200	.001200	....	....	
12, 250	49, 000	.014333	.001133	....	....	
12, 500	50, 000	.015500	.001167	....	....	
12, 750	51, 000	.016667	.001167	....	....	
13, 000	52, 000	.018000	.001333	....	....	
13, 250	53, 000	.019167	.001167	....	....	
13, 500	54, 000	.020667	.001500	....	....	
13, 750	55, 000	.022000	.001333	....	....	
14, 000	56, 000	.023667	.001667	....	....	
14, 250	57, 000	.025333	.001666	....	....	
14, 500	58, 000	.027000	.001667	....	....	
14, 750	59, 000	.029500	.002500	....	....	
15, 000	60, 000	.031167	.001667	....	....	
15, 500	62, 000	.035333	.004166	....	....	
16, 000	64, 000	.040000	.004667	....	....	
16, 500	66, 000	.045667	.005667	....	....	
17, 000	68, 000	.052500	.006833	....	....	
17, 500	70, 000	.060333	.007833	....	....	
18, 000	72, 000	.063333	.003000	....	....	
18, 500	74, 000	.0900	.026667	....	....	
19, 000	76, 000	.1333	.0433	....	....	
19, 050	76, 200	.1567	.0234	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76, 200
Elastic limit per square inch of original section	do...	39, 000
Elongation per inch after rupture	inch..	0. 2267
Elongation per inch under strain at elastic limit	do...	.001267
Reduction in diameter at point of rupture	do...	.114
Reduction in area after rupture, per centum of original section		36. 4
Position of rupture		¼ inch from middle of stem
Character of broken surface		granular; dull spot at circumference
Elongation of inch sections		″.15, ″.36, ″.17

No. 2177.

Marks, $_{\mathrm{B}}{}^{8}\mathrm{T}_{1}{}^{\mathrm{T}_{10}}{}_{\mathrm{M}}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000467	.000200	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.001033	.000233	0.	....	
8,500	34,000	.001167	.000134	....	....	Elastic limit.
8,750	35,000	.003000	.001833	....	....	
9,000	36,000	.006400	.003400	....	....	
9,250	37,000	.007667	.001267	....	....	
9,500	38,000	.009000	.001333	....	....	
9,750	39,000	.010400	.001400	....	....	
10,000	40,000	.011333	.000933	....	....	
10,250	41,000	.012333	.001000	....	....	
10,500	42,000	.013733	.001400	....	....	
10,750	43,000	.015067	.001334	....	....	
11,000	44,000	.016000	.000933	....	....	
11,250	45,000	.017233	.001233	....	....	
11,500	46,000	.018700	.001467	....	....	
11,750	47,000	.020033	.001333	....	....	
12,000	48,000	.021333	.001300	....	....	
12,250	49,000	.022667	.001334	....	....	
12,500	50,000	.025000	.002333	....	....	
13,000	52,000	.028000	.003000	....	....	
13,500	54,000	.032667	.004667	....	....	
14,000	56,000	.036667	.004000	....	....	
14,500	58,000	.041833	.005166	....	....	
15,000	60,000	.047333	.005500	....	....	
15,500	62,000	.054500	.007167	....	....	
16,000	64,000	.062333	.007833	....	....	
16,500	66,000	.0733	.010967	....	....	
17,000	68,000	.0933	.0200	....	....	
17,500	70,000	.1133	.0200	....	....	
17,870	71,480	.1767	.0634	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	71,480
Elastic limit per square inch of original section	do...	34,000
Elongation per inch after rupture	inch..	0.2667
Elongation per inch under strain at elastic limit	do...	.001167
Reduction in diameter at point of rupture	do...	.115
Reduction in area after rupture, per centum of original section		36.4
Position of rupture		⅜ inch from middle of stem
Character of broken surface		granular, 40 per centum; silky, 60 per centum
Elongation of inch sections		″.21, ″.41, ″.18

No. 2178.

Marks, $\overset{8\ T_{10}}{M\ T_1\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	. 000133	. 000133	0.	....	
2, 500	10, 000	. 000300	. 000167	0.	....	
3, 750	15, 000	. 000433	. 000133	0.	....	
5, 000	20, 000	. 000600	. 000167	0.	....	
6, 250	25, 000	. 000800	. 000200	0.	....	
7, 500	30, 000	. 000967	. 000167	0.	....	
8, 750	35, 000	. 001100	. 000133	0.	....	
9, 000	36, 000	. 001133	. 000033	....	....	Elastic limit.
9, 250	37, 000	. 001233	. 000100	....	....	
9, 500	38, 000	. 004000	. 002767	....	....	
9, 750	39, 000	. 007667	. 003667	....	....	
10, 000	40, 000	. 008667	, 001000	....	....	
10, 250	41, 000	. 009833	. 001166	....	....	
10, 500	42, 000	. 010667	. 000834	....	....	
10, 750	43, 000	. 011667	. 001000	....	....	
11, 000	44, 000	. 012833	. 001166	....	....	
11, 250	45, 000	. 013967	. 001134	....	....	
11, 500	46, 000	. 015400	. 001433	....	....	
11, 750	47, 000	. 016667	. 001267	....	....	
12, 000	48, 000	. 017833	. 001166	....	....	
12, 250	49, 000	. 018800	. 000967	....	....	
12, 500	50, 000	. 020133	. 001333	....	....	
13, 000	52, 000	. 022833	. 002700	....	....	
13, 500	54, 000	. 026000	. 003167	....	....	
14, 000	56, 000	. 029333	. 003333	....	....	
14, 500	58, 000	. 033000	. 003667	....	....	
15, 000	60, 000	. 036667	. 003667	....	....	
15, 500	62, 000	. 041600	. 004933	....	....	
16, 000	64, 000	. 046667	. 005067	....	....	
16, 500	66, 000	. 053333	. 006666	....	....	
17, 000	68, 000	. 060667	. 007334	....	....	
17, 500	70, 000	. 068333	. 007666	....	....	
18, 000	72, 000	. 0867	. 018367	....	....	
18, 500	74, 000	. 1033	. 0166	....	....	
19, 000	76, 000	. 1467	. 0434	....	....	
19, 010	76, 040	. 1667	. 0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76, 040
Elastic limit per square inch of original section	do...	36, 000
Elongation per inch after rupture	inch..	0. 1933
Elongation per inch under strain at elastic limit	do...	. 001133
Reduction in diameter at point of rupture	do...	. 074
Reduction in area after rupture, per centum of original section		21. 6
Position of rupture		⅜ inch from middle of stem
Character of broken surface		granular; dull eccentric spot
Elongation of inch sections		″.20, ″.22*, ″.16

No. 2179.

Marks, $\substack{8\ T_{10}\\ M\ T_{2}\ O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000267	.000134	0.	....	
3, 750	15, 000	.000467	.000200	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
9, 000	36, 000	.001167	.000034	....	....	
9, 250	37, 000	.001200	.000033	....	....	
9, 500	38, 000	.001233	.000033	....	....	Elastic limit.
9, 750	39, 000	.001367	.000134	....	....	
10, 000	40, 000	.010000	.008633	....	....	
10, 250	41, 000	.010667	.000667	....	....	
10, 500	42, 000	.011600	.000933	....	....	
10, 750	43, 000	.012667	.001067	....	....	
11, 000	44, 000	.013700	.001033	....	....	
11, 250	45, 000	.014600	.000900	....	....	
11, 500	46, 000	.015733	.001133	....	....	
11, 750	47, 000	.016733	.001000	....	....	
12, 000	48, 000	.018267	.001534	....	....	
12, 250	49, 000	.019333	.001066	....	....	
12, 500	50, 000	.020500	.001167	....	....	
13, 000	52, 000	.023167	.002667	....	....	
13, 500	54, 000	.025833	.002666	....	....	
14, 000	56, 000	.029000	.003167	....	....	
14, 500	58, 000	.032333	.003333	....	....	
15, 000	60, 000	.036667	.004334	....	....	
15, 500	62, 000	.041167	.004500	....	....	
16, 000	64, 000	.045667	.004500	....	....	
16, 500	66, 000	.051000	.005333	....	....	
17, 000	68, 000	.057067	.006067	....	....	
17, 500	70, 000	.0667	.009633	....	....	
18, 000	72, 000	.0800	.0133	....	....	
18, 500	74, 000	.0967	.0167	....	....	
19, 000	76, 000	.1133	.0166	....	....	
19, 420	77, 680	.1700	.0567	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds.. 77, 680
Elastic limit per square inch of original section..........do... 38, 000
Elongation per inch after rupture..........inch.. 0. 2333
Elongation per inch under strain at elastic limit..........do... .001233
Reduction in diameter at point of rupture..........do... .114
Reduction in area after rupture, per centum of original section.......... 36. 4
Position of rupture..........″.20 from middle of stem
Character of broken surface..........silky; slightly granular
Elongation of inch sections..........″.18, ″.35*, ″.17

No. 2180.

Marks, $^{8\ T_{50}}_{M\ T_3\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000433	.000133	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001067	.000134	0.	....	
9,000	36,000	.001100	.000033	....	....	
9,250	37,000	.001133	.000033	....	....	
9,500	38,000	.001167	.000034	....	....	
9,750	39,000	.001200	.000033	....	....	
10,000	40,000	.001233	.000033	....	....	
10,250	41,000	.001267	.000034	....	....	
10,500	42,000	.001333	.000066	....	....	
10,750	43,000	.001400	.000067	....	....	Elastic limit.
11,000	44,000	.012600	.001200	....	....	
11,250	45,000	.013000	.000400	....	....	
11,500	46,000	.013733	.000733	....	....	
11,750	47,000	.014667	.000934	....	....	
12,000	48,000	.015667	.001000	....	....	
12,250	49,000	.016667	.001000	....	....	
12,500	50,000	.018000	.001333	....	....	
13,000	52,000	.020000	.002000	....	....	
13,500	54,000	.022667	.002667	....	....	
14,000	56,000	.025333	.002666	....	....	
14,500	58,000	.028067	.002734	....	....	
15,000	60,000	.031167	.003100	....	....	
15,500	62,000	.035000	.003833	....	....	
16,000	64,000	.039167	.004167	....	....	
16,500	66,000	.043333	.004166	....	....	
17,000	68,000	.048667	.005334	....	....	
17,500	70,000	.054000	.005333	....	....	
18,000	72,000	.061333	.007333	....	....	
18,500	74,000	.0700	.008667	....	....	
19,000	76,000	.0800	.0100	....	....	
19,500	78,000	.1000	.0200	....	....	
20,000	80,000	.1333	.0333	....	....	
20,060	80,240	.1433	.0100	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	80,240
Elastic limit per square inch of original section	do	43,000
Elongation per inch after rupture	inch	0.1567
Elongation per inch under strain at elastic limit	do	.001400
Reduction in diameter at point of rupture	do	.054
Reduction in area after rupture, per centum of original section		18.3
Position of rupture		¾ inch from neck
Character of broken surface		granular, 50 per centum; dull flaky, 50 per centum
Elongation of inch sections		″.17*, ″.14, ″.16

[Additional specimens.]

No. 2534.

Marks, $\overset{8\ T_{50}}{B\ T_4\ I}$
Diameter, ".565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000400	.000233	0.	....	
3,750	15,000	.000567	.000167	0.	....	
5,000	20,000	.000767	.000200	0.	....	
6,250	25,000	.000933	.000166	0.	....	
7,500	30,000	.001067	.000134	0.	....	
8,750	35,000	.001267	.000200	....	....	Elastic limit.
9,000	36,000	.001400	.000133	....	....	
9,250	37,000	.001500	.000106	....	....	
9,500	38,000	.008000	.006500	....	....	
9,750	39,000	.009167	.001167	....	....	
10,000	40,000	.010033	.000866	....	....	
10,500	42,000	.012833	.002800	....	....	
11,000	44,000	.015333	.002500	....	....	
11,500	46,000	.017667	.002334	....	....	
12,000	48,000	.020667	.003000	....	....	
12,500	50,000	.023333	.002666	....	....	
13,000	52,000	.026367	.003034	....	....	
13,500	54,000	.030000	.003633	....	....	
14,000	56,000	.034500	.004500	....	....	
14,500	58,000	.038667	.004167	....	....	
15,000	60,000	.0433	.004633	....	....	
15,500	62,000	.0500	.0067	....	....	
16,000	64,000	.0600	.0100	....	....	
16,500	66,000	.0700	.0100	....	....	
17,000	68,000	.0767	.0067	....	....	
17,500	70,000	.0967	.0200	....	....	
18,000	72,000	.1367	.0400	....	....	
18,160	72,640	.1733	.0366	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	72,640
Elastic limit per square inch of original section	do...	35,000
Elongation per inch after rupture	inch..	0.2233
Elongation per inch under strain at elastic limit	do...	.001267
Reduction in diameter at point of rupture	do...	.065
Reduction in area after rupture, per centum of original section		21.4
Position of rupture		".65 from neck
Character of broken surface		granular; opened cracks in surface of stem
Elongation of inch sections		".19, ".25, ".23

No. 2535.

Marks, $\overset{8\,T_{50}}{B\,T_{5}\,O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000300	.000167	0.	....	
3, 750	15, 000	.000433	.000133	0.	....	
5, 000	20, 000	.000633	.000200	0.	....	
6, 250	25, 000	.000767	.000134	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001100	.000167	....	....	
9, 000	36, 000	.001167	.000067	....	....	
9, 250	37, 000	.001233	.000066	....	....	
9, 500	38, 000	.001300	.000067	....	....	Elastic limit.
9, 750	39, 000	.006167	.004867	....	....	
10, 000	40, 000	.008400	.002233	....	....	
10, 500	42, 000	.010667	.002267	....	....	
11, 000	44, 000	.012700	.002033	....	....	
11, 500	46, 000	.015200	.002500	....	....	
12, 000	48, 000	.017833	.002633	....	....	
12, 500	50, 000	.020500	.002667	....	....	
13, 000	52, 000	.024333	.003833	....	....	
13, 500	54, 000	.027667	.003333	....	....	
14, 000	56, 000	.031067	.003400	....	....	
14, 500	58, 000	.036667	.005600	....	....	
15, 000	60, 000	.0400	.003333	....	....	
15, 500	62, 000	.0467	.0067	....	....	
16, 000	64, 000	.0533	.0066	....	....	
16, 500	66, 000	.0600	.0067	....	....	
17, 000	68, 000	.0700	.0100	....	....	
17, 500	70, 000	.0900	.0200	....	....	
18, 000	72, 000	.1067	.0167	....	....	
18, 390	73, 560	.1767	.0700	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	73, 560
Elastic limit per square inch of original section	do...	38, 000
Elongation per inch after rupture	inch..	0. 2900
Elongation per inch under strain at elastic limit	do...	.001300
Reduction in diameter at point of rupture	do...	.194
Reduction in area after rupture, per centum of original section		57. 0
Position of rupture		1″.70 from neck
Character of broken surface		silky
Elongation of inch sections		″.21, ″.47*, ″.19

No. 2536.

Marks, $\overset{8\,T_{8}}{B\,T.\,M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000367	.000200	0.	....	
3, 750	15, 000	.000500	.000133	0.	....	
5, 000	20, 000	.000667	.000167	0.	....	
6, 250	25, 000	.000833	.000166	0.	....	
7, 500	30, 000	.001033	.000200	0.	....	
8, 750	35, 000	.001233	.000200	....	....	Elastic limit.
9, 000	36, 000	.001367	.000134	....	....	
9, 250	37, 000	.008367	.007000	....	....	
9, 500	38, 000	.009167	.000800	....	....	
9, 750	39, 000	.009900	.000733	....	....	
10, 000	40, 000	.011033	.001133	....	....	
10, 500	42, 000	.013167	.002134	....	....	
11, 000	44, 000	.015667	.002500	....	....	
11, 500	46, 000	.018000	.002333	....	....	
12, 000	48, 000	.020400	.002400	....	....	
12, 500	50, 000	.023167	.002767	....	....	
13, 000	52, 000	.026167	.003000	....	....	
13, 500	54, 000	.029700	.003533	....	....	
14, 000	56, 000	.033567	.003867	....	....	
14, 500	58, 000	.0367	.003133	....	....	
15, 000	60, 000	.0400	.0033	....	....	
15, 500	62, 000	.0467	.0067	....	....	
16, 000	64, 000	.0567	.0100	....	....	
16, 500	66, 000	.0633	.0066	....	....	
17, 000	68, 000	.0700	.0067	....	....	
17, 500	70, 000	.0833	.0133	....	....	
18, 000	72, 000	.1033	.0200	....	....	
18, 500	74, 000	.1300	.0267	....	....	
18, 720	74, 880	.1833	.0533	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	74, 880
Elastic limit per square inch of original section	do...	35, 000
Elongation per inch after rupture	inch..	0. 2333
Elongation per inch under strain at elastic limit	do...	.001223
Reduction in diameter at point of rupture	do ..	.104
Reduction in area after rupture, per centum of original section		33. 5
Position of rupture		1″.70 from neck
Character of broken surface		silky
Elongation of inch sections		″.19, ″.34*, ″.17

No. 2537.

Marks, $\overset{8}{\underline{M}}\,\overset{T_{50}}{T_4}\,I$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.		
2, 500	10, 000	.000300	.000200	0.		
3, 750	15, 000	.000433	.000133	0.		
5, 000	20, 000	.000600	.000167	0.		
6, 250	25, 000	.000767	.000167	0.		
7, 500	30, 000	.000933	.000166	0.		
8, 750	35, 000	.001100	.000167			
9, 000	36, 000	.001167	.000067			
9. 250	37, 000	.001200	.000033			
9, 500	38, 000	.001267	.000067			Elastic limit.
9, 750	39, 000	.010333	.009066			
10, 000	40, 000	.011033	.000700			
10, 500	42, 000	.012533	.001500			
11, 000	44, 000	.014667	.002134			
11, 500	46, 000	.016833	.002166			
12, 000	48, 000	.019000	.002167			
12, 500	50, 000	.021667	.002667			
13, 000	52, 000	.025000	.003333			
13. 500	54, 000	.028667	.003667			
14, 000	56, 000	.031333	.002666			
14, 500	58, 000	.0333	.001967			
15, 000	60, 000	.0400	.0067			
15, 500	62, 000	.0433	.0033			
16, 000	64, 000	.0500	.0067			
16, 500	66, 000	.0533	.0033			
17, 000	68, 000	.0633	.0100			
17, 500	70, 000	.0700	.0067			
18, 000	72, 000	.0867	.0167			
18, 500	74, 000	.1000	.0133			
19, 000	76, 000	.1367	.0367			
19, 100	76, 400	.1767	.0400			Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds..	76, 400
Elastic limit per square inch of original section..........do...	38, 000
Elongation per inch after rupture..........inch..	0. 2033
Elongation per inch under strain at elastic limit..........do...	.001267
Reduction in diameter at point of rupture..........do...	.105
Reduction in area after rupture, per centum of original section..........	33. 5
Position of rupture..........	″.65 from neck
Character of broken surface..........	granular, 60 per centum; silky, 40 per centum
Elongation of inch sections..........	″.14, ″.17, ″.30*

No. 2538.

Marks, $\overset{8}{\text{M}}\,\overset{\text{T}_{16}}{\text{T}_{4}}\,\text{O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000233	.000100	0.	....	
3,750	15,000	.000400	.000167	0.	....	
5,000	20,000	.000567	.000167	0.	....	
6,250	25,000	.000767	.000200	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001033	.000100	....	....	
9,000	36,000	.001067	.000034	....	....	
9,250	37,000	.001100	.000033	....	....	
9,500	38,000	.001167	.000067	....	....	Elastic limit.
9,750	39,000	.001267	.000100	....	....	
10,000	40,000	.006333	.005066	....	....	
10,500	42,000	.010833	.004500	....	....	
11,000	44,000	.012333	.001500	....	....	
11,500	46,000	.014400	.002067	....	....	
12,000	48,000	.017000	.002600	....	....	
12,500	50,000	.019167	.002167	....	....	
13,000	52,000	.021667	.002500	....	....	
13,500	54,000	.024500	.002833	....	....	
14,000	56,000	.028000	.003500	....	....	
14,500	58,000	.031000	.003000	....	....	
15,000	60,000	.035167	.004167	....	....	
15,500	62,000	.0367	.001533	....	....	
16,000	64,000	.0433	.0066	....	....	
16,500	66,000	.0533	.0100	....	....	
17,000	68,000	.0600	.0067	....	....	
17,500	70,000	.0667	.0067	....	....	
18,000	72,000	.0800	.0133	....	....	
18,500	74,000	.0967	.0167	....	....	
19,000	76,000	.1267	.0300	....	....	
19,150	76,600	.1667	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	76,600
Elastic limit per square inch of original section	do...	38,000
Elongation per inch after rupture	inch..	0.2567
Elongation per inch under strain at elastic limit	do ..	.001167
Reduction in diameter at point of rupture	do...	.154
Reduction in area after rupture, per centum of original section		47.2
Position of rupture		1″.28 from neck
Character of broken surface		silky, with slight granulation
Elongation of inch sections		″.28*, ″.34*, ″.15

No. 2539.

Marks, $\overset{8\ T_{30}}{M\ T_{6}\ M}$
Diameter, ''.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000233	.000133	0.	....	
3,750	15,000	.000400	.000167	0.	....	
5,000	20,000	.000567	.000167	0.	....	
6,250	25,000	.000700	.000133	0.	....	
7,500	30,000	.000867	.000167	0.	....	
8,750	35,000	.001067	.000200	....	....	
9,000	36,000	.001100	.000033	....	....	
9,250	37,000	.001133	.000033	....	....	Elastic limit.
9,500	38,000	.007933	.006800	....	....	
9,750	39,000	.009700	.001767	....	....	
10,000	40,000	.010367	.000667	....	....	
10,500	42,000	.012500	.002133	....	....	
11,000	44,000	.015133	.002633	....	....	
11,500	46,000	.017067	.001934	....	....	
12,000	48,000	.019700	.002633	....	....	
12,500	50,000	.022667	.002967	....	....	
13,000	52,000	.025667	.003000	....	....	
13,500	54,000	.029333	.003666	....	....	
14,000	56,000	.033000	.003667	....	....	
14,500	58,000	.037367	.004367	....	....	
15,000	60,000	.0433	.005933	....	....	
15,500	62,000	.0500	.0067	....	....	
16,000	64,000	.0567	.0067	....	....	
16,500	66,000	.0633	.0066	....	....	
17,000	68,000	.0733	.0100	....	....	
17,500	70,000	.0933	.0200	....	....	
18,000	72,000	.1133	.0200	....	....	
18,360	73,440	.1733	.0600	....	....	Tensile strength.

General summary.

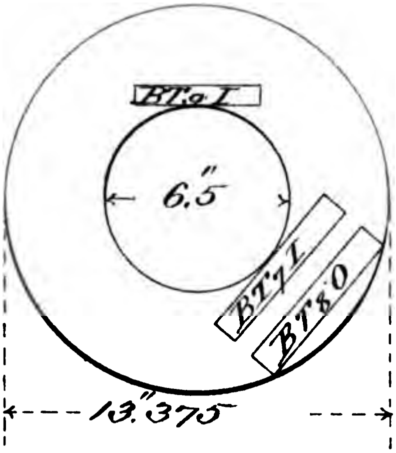
Tensile strength per square inch of original section	pounds..	73,440
Elastic limit per square inch of original section	do...	37,000
Elongation per inch after rupture	inch..	0.2367
Elongation per inch under strain at elastic limit	do...	.001133
Reduction in diameter at point of rupture	do...	.105
Reduction in area after rupture, per centum of original section		33.5
Position of rupture		1''.65 from neck

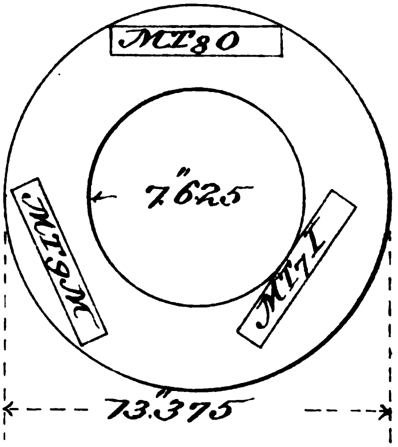
Character of broken surface, granular; dull flaky spot at circumference; opened cracks in surface of stem.

Diameter .1 inch from point of rupture	''.45
Elongation of inch sections	''.21, ''.34*, ''.16

Tube No. 50 8" converted Rifle.

Additional specimens





No. 2729.

Marks, $\overset{8\,\mathrm{Cn}\,\mathrm{R}_{40}\,\mathrm{T}}{\mathrm{B\,T,\,I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load
1, 250	5, 000	.000100	.000100	0.		
2, 500	10, 000	.000267	.000167	0.		
3, 750	15, 000	.000433	.000166	0.		
5, 000	20, 000	.000600	.000167	0.		
6, 250	25, 000	.000767	.000167	0.		
7, 500	30, 000	.000933	.000166	0.		
8, 750	35, 000	.001100	.000167	0.		
9, 000	36, 000	.001100	0.			
9, 250	37, 000	.001133	.000033			
9, 500	38, 000	.001167	000034			
9, 750	39, 000	.001233	.000066			
10, 000	40, 000	.001267	.000034			
10, 250	41, 000	.001300	.000033			
10, 500	42, 000	.001333	.000033			
10, 750	43, 000	.001367	.000034			
11, 000	44, 000	.001400	.000033			
11, 250	45, 000	.001467	.000067			
11, 500	46, 000	.001500	.000033			Elastic limit.
11, 750	47, 000	.001600	.000100			
12, 000	48, 000	.004233	.002633			
12, 500	50, 000	.007533	.003300			
13, 000	52, 000	.009867	.002334			
13, 500	54, 000	.012433	.002566			
14, 000	56, 000	.014733	.002300			
14, 500	58, 000	.017600	.002867			
15, 000	60, 000	.020233	.002633			
15, 500	62, 000	.023367	.003134			
16, 000	64, 000	.026833	.003466			
16, 500	66, 000	.030933	.004100			
17, 000	68, 000	.035000	.004067			
17, 500	70, 000	.038333	.003333			
18, 000	72, 000	.041667	.003334			
18, 500	74, 000	.0533	.011633			
19, 000	76, 000	.0667	.0134			
19, 500	78, 000	.0833	.0166			
20, 000	80, 000	.1267	.0434			Tensile strength.

General summary.

Tensile strength per square inch of original section……pounds..	80, 000
Elastic limit per square inch of original section……do…	46, 000
Elongation per inch after rupture……inch..	0. 1300
Elongation per inch under strain at elastic limit……do…	.001500
Reduction in diameter at point of rupture……do…	.064
Reduction in area after rupture, per centum of original section……	21. 4
Position of rupture……	1 inch from neck

Character of broken surface, granular; dull flaky spot at the circumference; opened cracks in surface of stem.

Elongation of inch sections……″.11, ″.13, ″.15

No. 2730.

Marks, $\begin{smallmatrix}8\,Cn\,R_{50}\,T\\ B\,T_8\,O\end{smallmatrix}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001133	.000166	0.	....	
9,000	36,000	.001167	.000034	....	....	
9,250	37,000	.001233	.000066	....	....	
9,500	38,000	.001267	.000034	....	....	
9,750	39,000	.001300	.000033	....	....	
10,000	40,000	.001333	.000033	....	....	
10,250	41,000	.001367	.000034	....	....	
10,500	42,000	.001400	.000033	....	....	
10,750	43,000	.001433	.000033	....	....	
11,000	44,000	.001467	.000034	....	....	
11,250	45,000	.001467	0.	....	....	
11,500	46,000	.001567	.000100	....	....	
11,750	47,000	.001633	.000066	....	....	
12,000	48,000	.001667	.000034	....	....	
12,250	49,000	.001700	.000033	....	....	
12,500	50,000	.001733	.000033	....	....	
12,750	51,000	.001767	.000034	....	....	
13,000	52,000	.001800	.000033	....	....	
13,250	53,000	.001867	.000067	....	....	Elastic limit.
13,500	54,000	.003100	.001233	....	....	
13,750	55,000	.005500	.002400	....	....	
14,000	56,000	.006667	.001167	....	....	
14,500	58,000	.009367	.002700	....	....	
15,000	60,000	.011767	.002400	....	....	
15,500	62,000	.014133	.002366	....	....	
16,000	64,000	.016600	.002467	....	....	
16,500	66,000	.019367	.002767	....	....	
17,000	68,000	.022033	.002666	....	....	
17,500	70,000	.025000	.002967	....	....	
18,000	72,000	.028667	.003667	....	....	
18,500	74,000	.032667	.004000	....	....	
19,000	76,000	.037233	.004566	....	....	
19,500	78,000	.0400	.002767	....	....	
20,000	80,000	.0467	.0067	....	....	
20,500	82,000	.0567	.0100	....	....	
21,000	84,000	.0667	.0100	....	....	
21,500	86,000	.0900	.0233	....	....	
21,800	87,200	.1333	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	87,200
Elastic limit per square inch of original section	do...	53,000
Elongation per inch after rupture	inch...	0.19667
Elongation per inch under strain at elastic limit	do...	.001867
Reduction in diameter at point of rupture	do...	.134
Reduction in area after rupture, per centum of original section		41.9
Position of rupture		1″.56 from neck
Character of broken surface		silky; trace of granulation
Elongation of inch sections		″.12, ″.35*, ″.12

No. 2731.

Marks, $^{8\,\mathrm{Cu}\,\mathrm{R_{50}}\,\mathrm{T}}_{\mathrm{B}\,\mathrm{T_9}\,\mathrm{I}}$
Diameter, ".505.
Sectional area, .20 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
200	1, 000	0.	0.	0.	0.	Initial load.
1, 000	5, 000	.000050	.000050	0.	....	
2, 000	10, 000	.000200	.000150	0.	....	
3, 000	15, 000	.000350	.000150	0.	....	
4, 000	20, 000	.000550	.000200	0.	....	
5, 000	25, 000	.000800	.000250	0.	....	
6, 000	30, 000	.000950	.000150	0.	....	
7, 000	35, 000	.001100	.000150	0.	....	
8, 000	40, 000	.001300	.000200	0.	....	
8, 200	41, 000	.001450	.000150	....	....	
8, 400	42, 000	.001500	.000050	....	....	
8, 600	43, 000	.001550	.000050	....	....	
8, 800	44, 000	.001600	.000050	....	....	
9, 000	45, 000	.001600	0.	....	....	
9, 200	46, 000	.001650	.000050	....	....	
9, 400	47, 000	.001650	0.	....	....	
9, 600	48, 000	.001700	.000050	....	....	
9, 800	49, 000	.001750	.000050	....	....	Elastic limit.
10, 000	50, 000	.003250	.001500	....	....	
10, 200	51, 000	.005450	.002200	....	....	
10, 400	52, 000	.006750	.001300	....	....	
10, 600	53, 000	.007900	.001150	....	....	
10, 800	54, 000	.009150	.001250	....	....	
11, 000	55, 000	.010050	.000900	....	....	
11, 200	56, 000	.011400	.001350	....	....	
11, 600	58, 000	.014350	.002950	....	....	
12, 000	60, 000	.016500	.002150	....	....	
12, 400	62, 000	.019600	.003100	....	....	
12, 800	64, 000	.022500	.002900	....	....	
13, 200	66, 000	.025600	.003100	....	....	
13, 600	68, 000	.029400	.003800	....	....	
14, 000	70, 000	.032850	.003450	....	....	
14, 400	72, 000	.038100	.005250	....	....	
14, 800	74, 000	.043400	.005300	....	....	
15, 200	76, 000	.050050	.006650	....	....	
15, 600	78, 000	.052500	.002450	....	....	
16, 000	80, 000	.0650	.0125	....	....	
16, 400	82, 000	.0950	.0300	....	....	
16, 700	83, 500	.1550	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	83, 500
Elastic limit per square inch of original section	do...	49, 000
Elongation per inch after rupture	inch..	0. 2250
Elongation per inch under strain at elastic limit	do...	.001750
Reduction in diameter at point of rupture	do ..	.125
Reduction in area after rupture, per centum of original section		43. 3
Position of rupture		".75 from neck
Character of broken surface		silky, opened cracks in surface of stem
Elongation of inch sections		".12, ".33*

No. 2732.

Marks, $^{8\ \text{Cn R}_{60}\ \text{T}}_{\text{M T, I}}$
Diameter ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	0.	....	
10,000	40,000	.001300	.000200	0.	....	
10,250	41,000	.001333	.000033	....	....	
10,500	42,000	.001367	.000034	....	....	
10,750	43,000	.001400	.000033	....	....	
11,000	44,000	.001433	.000033	....	....	
11,250	45,000	.001467	.000034	....	....	
11,500	46,000	.001500	.000033	....	....	
11,750	47,000	.001533	.000033	....	....	
12,000	48,000	.001567	.000034	....	....	
12,250	49,000	.001600	.000033	....	....	
12,500	50,000	.001667	.000067	....	....	Elastic limit.
12,750	51,000	.001933	.000266	....	....	
13,000	52,000	.003400	.001467	....	....	
13,250	53,000	.004567	.001167	....	....	
13,500	54,000	.006533	.001966	....	....	
14,000	56,000	.008933	.002400	....	....	
14,500	58,000	.011333	.002400	....	....	
15,000	60,000	.013567	.002234	....	....	
15,500	62,000	.016000	.002433	....	....	
16,000	64,000	.018600	.002600	....	....	
16,500	66,000	.021367	.002767	....	....	
17,000	68,000	.024267	.002900	....	....	
17,500	70,000	.027600	.003333	....	....	
18,000	72,000	.031267	.003667	....	....	
18,500	74,000	.035000	.003733	....	....	
19,000	76,000	.038333	.003333	....	....	
19,500	78,000	.041667	.003334	....	....	
20,000	80,000	.0533	.011633	....	....	
20,500	82,000	.0633	.0100	....	....	
21,000	84,000	.0767	.0134	....	....	
21,500	86,000	.1100	.0333	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	86,000
Elastic limit per square inch of original section	do...	50,000
Elongation per inch after rupture	inch..	0.1467
Elongation per inch under strain at elastic limit	do ..	.001667
Reduction in diameter at point of rupture	do...	.054
Reduction in area after rupture, per centum of original section		18.3
Position of rupture		1″.35 from neck
Character of broken surface		granular; flaky spot at circumference
Elongation of inch sections		″.10, ″.22*, ″.12

No. 2733.

Marks, $^{8}\genfrac{}{}{0pt}{}{\text{Cn R}_{50}\text{ T}}{\text{M T}_{8}\text{ O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000267	.000134	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000800	.000200	0.	....	
7, 500	30, 000	.000967	.000167	0.	....	
8, 750	35, 000	.001133	.000166	0.	....	
10, 000	40, 000	.001300	.000167	0.	....	
10, 250	41, 000	.001300	0.	....	....	
10, 500	42, 000	.001333	.000033	....	....	
10, 750	43, 000	.001367	.000034	....	....	
11, 000	44, 000	.001400	.000033	....	....	
11, 250	45, 000	.001433	.000033	....	....	
11, 500	46, 000	.001500	.000067	....	....	Elastic limit.
11, 750	47, 000	.002400	.000900	....	....	
12, 000	48, 000	.004267	.001867	....	....	
12, 250	49, 000	.005667	.001400	....	....	
12, 500	50. 000	.006733	.001066	....	....	
13, 000	52, 000	.009100	.002367	....	....	
13, 500	54, 000	.011600	.002500	....	....	
14, 000	56, 000	.013733	.002133	....	....	
14, 500	58, 000	.016267	.002534	....	....	
15, 000	60, 000	.018567	.002300	....	....	
15, 500	62, 000	.021500	.002933	....	....	
16, 000	64. 000	.024500	.003000	....	....	
16, 500	66, 000	.027733	.003233	....	....	
17, 000	68, 000	.031333	.003600	....	....	
17, 500	70, 000	.035733	.004400	....	....	
18, 000	72, 000	.038333	.002600	....	....	
18, 500	74, 000	.0433	.004967	....	....	
19, 000	76, 000	.0533	.0100	....	....	
19, 500	78, 000	.0633	.0100	....	....	
20, 000	80, 000	.0733	.0100	....	....	
20, 500	82, 000	.0967	.0234	....	....	
21, 000	84, 000	.1600	.0633	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	84, 000
Elastic limit per square inch of original section	do...	46, 000
Elongation per inch after rupture	inch..	0. 1800
Elongation per inch under strain at elastic limit	do...	.001500
Reduction in diameter at point of rupture	do...	.074
Reduction in area after rupture, per centum of original section		24. 6
Position of rupture		1″.10 from neck

Character of broken surface, granular; dull flaky spot at the circumference; opened cracks in surface of stem.

Elongation of inch sections .... ″.14, ″.15, ″.25

No. 2734.

Marks, $^{8\ \mathrm{Cn}\ \mathrm{R}_{60}\ \mathrm{T}}_{\mathrm{M}\ \mathrm{T},\ \mathrm{M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000033	.000033	0.	....	
2, 500	10, 000	.000233	.000200	0.	....	
3, 750	15, 000	.000333	.000100	0.	....	
5, 000	20, 000	.000567	.000234	0.	....	
6, 250	25, 000	.000700	.000134	0.	....	
7, 500	30, 000	.000900	.000200	0.	....	
8, 750	35, 000	.001067	.000167	0.	....	
10, 000	40, 000	.001267	.000200	0.	....	
10 250	41, 000	.001300	.000033	....	....	
10, 500	42, 000	.001333	.000033	....	....	
10, 750	43, 000	.001367	.000034	....	....	
11, 000	44, 000	.001400	.000033	....	....	
11, 250	45, 000	.001433	.000033	....	....	
11, 500	46, 000	.001467	.000034	....	....	
11, 750	47, 000	.001567	.000100	....	....	
12, 000	48, 000	.001633	.000066	....	....	
12, 250	49, 000	.001733	.000100	....	....	Elastic limit.
12, 500	50, 000	.002333	.000600	....	....	
12, 750	51, 000	.003567	.001234	....	....	
13, 000	52, 000	.004833	.001266	....	....	
13, 500	54, 000	.007333	.002500	....	....	
14, 000	56, 000	.009933	.002600	....	....	
14, 500	58, 000	.012033	.002100	....	....	
15, 000	60, 000	.014367	.002334	....	....	
15, 500	62, 000	.017033	.002666	....	....	
16, 000	64, 000	.019433	.002400	....	....	
16, 500	66, 000	.022333	.002900	....	....	
17, 000	68, 000	.025367	.003034	....	....	
17, 500	70, 000	.028833	.003466	....	....	
18, 000	72, 000	.032600	.003767	....	....	
18, 500	74, 000	.036900	.004300	....	....	
19, 000	76, 000	.041667	.004767	....	....	
19. 500	78, 000	.0467	.005033	....	....	
20, 000	80, 000	.0600	.0133	....	....	
20, 500	82, 000	.0667	.0067	....	....	
20, 600	82, 400	....	....	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	82, 400
Elastic limit, per square inch of original section	do ..	49, 000
Elongation per inch after rupture	inch..	0. 0700
Elongation per inch under strain at elastic limit	do...	.001733
Reduction in diameter at point of rupture	do...	.034
Reduction in area after rupture, per centum of original section		11. 8
Position of rupture		″.53 from neck
Character of broken surface		granular; flaky spot at circumference
Elongation of inch sections		″.08*, ″.06, ″.07

TABULATION OF SPECIMENS FROM TUBES FOR 8-INCH CONVERTED RIFLES.

No. of test.	Position in gun.	Location of specimens.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.	Specific gravity.	Hardness.	Remarks.
			Pounds.	*Pounds.*	*Per cent.*	*Per cent.*				
2341	Breech No. 7	Inside	37,000	70,720	18.0	21.4	Granular; defective spot			Additional specimen.
2342	...do	...do	34,000	69,920	13.3	18.8	...do			Do.
2343	...do	...do	37,000	68,000	10.7	15.0	...do			Do.
2344	Muzzle No. 7	...do	41,000	78,880	26.0	44.6	Silky			Do.
2346	...do	Outside	39,000	76,440	27.0	49.7	...do			Do.
2345	...do	Middle	37,000	79,160	23.7	44.6	...do			Do.
2662	Breech No. 7	Inside	33,000	70,280	26.7	49.7	...do			New tube.
2663	...do	Outside	33,000	73,960	20.0	30.6	Silky; flaky			Do.
2664	...do	Middle	32,000	71,520	26.0	36.4	Silky; surface cracks			Do.
2665	Muzzle No. 7	Inside	39,000	77,680	22.7	44.6	Silky			Do.
2666	...do	Outside	37,000	78,200	20.7	44.6	...do			Do.
2667	...do	Middle	38,000	77,520	20.0	41.9	...do			Do.
2779	Breech No. 7	Inside	40,000	80,800	18.0	39.2	Silky; flaky			Additional specimen.
2780	...do	Outside	43,000	84,840	18.7	44.6	Silky			Do.
2781	...do	Middle	38,000	76,560	20.3	44.6	Silky; surface cracks			Do.
2782	Muzzle No. 7	Inside	46,000	82,800	20.3	49.7	Silky			Do.
2783	...do	Outside	41,000	78,360	19.7	44.6	...do			Do.
2784	...do	Middle	38,000	80,240	19.0	52.2	...do			Do.
2146	Breech No. 8	Inside	35,000	70,200	26.0	44.6	Silky; surface cracks	7.8591	11.23	New tube.
2147	...do	Outside	37,000	73,520	25.0	47.2	...do			Do.
2148	...do	Middle	41,000	76,080	23.0	33.5	...do			Do.
2149	Muzzle No. 8	Inside	35,000	75,160	21.7	39.2	Silky			Do.
2150	...do	Outside	37,000	77,640	23.3	36.4	Granular, 60 per cent.; silky, 40 per cent.			Do.
2151	...do	Middle	41,000	80,060	23.3	39.2	Granular, 50 per cent.; silky, 50 per cent.			Do.
1000	Breech No. 9	Inside	44,000	77,120	25.3	47.2	Silky			Additional specimen.
2164	Breech No. 12	...do	39,000	76,680	26.3	52.2	...do	7.8588	13.14	New tube.
2165	...do	Outside	41,000	78,320	21.0	47.2	...do			Do.
2166	...do	Middle	40,000	75,000	29.3	47.2	...do			Do.
2167	Muzzle No. 12	Inside	43,000	79,040	24.0	44.6	...do			Do.
2168	...do	Outside	41,000	76,840	23.0	52.2	...do			Do.
2169	...do	Middle	40,000	75,280	25.7	44.6	Silky; slight granulation			Do.
2181	Breech No. 13	Inside	41,000	75,520	26.7	54.6	Silky			Do.
2182	...do	Outside	44,000	78,800	26.0	52.2	...do			Do.
2183	...do	Middle	40,000	77,000	24.3	52.2	...do			Do.
2184	Muzzle No. 13	Inside	43,000	76,800	25.7	47.2	...do			Do.
2185	...do	Outside	41,000	77,840	23.3	54.6	...do			Do.
2186	...do	Middle	46,000	80,400	24.7	49.7	...do			Do.
2350	Breech No. 15	Inside	43,000	70,320	30.0	59.3	...do			Do.
2351	...do	Outside	46,000	71,200	28.7	59.3	...do			Do.

TABULATION OF SPECIMENS FROM TUBES FOR 8-INCH CONVERTED RIFLES—Continued.

No. of test.	Position in gun.	Location of specimens.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.	Specific gravity.	Hardness.	Remarks.
			Pounds.	*Pounds.*	*Per cent.*	*Per cent.*				
2352	Breech No. 15	Middle	40,000	70,200	30.7	57.0	Silky			New tube.
2353	Muzzle No. 15	Inside	41,000	75,160	29.3	57.0	Silky; surface cracks			Do.
2354	...do	Outside	43,000	76,400	25.0	57.0	Silky			Do.
2355	...do	Middle	39,000	72,000	27.3	52.2	...do			Do.
2618	Breech No. 15	Inside	43,000	80,720	22.0	49.7	Silky; surface cracks			Do.
2619	...do	Outside	42,000	81,840	22.3	54.6	Silky			Do.
2620	...do	Middle	42,000	80,760	20.3	49.7	...do			Do.
2621	Muzzle No. 15	Inside	45,000	87,680	22.3	49.7	...do			Do.
2622	...do	Outside	47,000	87,920	18.3	49.7	...do			Do.
2623	...do	Middle	45,000	86,080	19.3	47.2	...do			Do.
2365	Breech No. 16	Inside	39,000	72,000	19.3	27.8	Granular; dull spot			Do.
2366	...do	Outside	38,000	76,120	22.3	36.4	...do			Do.
2367	...do	Middle	40,000	75,520	24.3	57.0	Silky			Do.
2368	Muzzle No. 16	Inside	39,000	77,680	20.3	41.9	Granular, 70 per cent.; silky, 30 per cent.			Do.
2369	...do	Outside	42,000	80,440	24.7	52.2	Silky			Do.
2370	...do	Middle	40,000	78,000	23.3	49.7	Silky; trace of granulation			Do.
2555	Breech No. 16	Inside	43,000	76,080	17.7	24.6	Granular; flaky spot			Additional specimen
2556	...do	Outside	39,000	76,640	26.3	54.6	Silky			Do.
2557	...do	Middle	40,000	76,320	24.0	41.9	...do			Do.
2612	...do	Inside	45,000	77,200	25.7	57.0	Silky; surface cracks			Do.
2613	...do	Outside	38,000	74,000	25.3	49.7	Silky			Do.
2614	...do	Middle	39,000	76,000	26.0	52.2	...do			Do.
997	Breech No. 18	Inside	31,000	71,630	28.0	44.6	...do			Do.
998	...do	Outside	37,000	74,480	19.3	33.5	Granular; dull spot			Do.
999	...do	Middle	34,000	71,920	14.7	21.4	Granular; blow hole			Do.
2125	...do	Inside	31,000	70,840	27.7	41.9	Silky; slight granulation			Do.
2126	...do	Outside	35,000	73,040	31.0	49.7	Silky			Do.
2127	...do	Middle	32,000	70,800	14.3	21.4	Granular; dull spot			Do.
2420	...do	Inside	38,000	72,560	25.7	41.6	Silky; surface cracks			New tube.
2421	...do	Outside	37,000	73,120	24.3	49.7	...do			Do.
2422	...do	Middle	40,000	75,000	24.0	41.9	...do			Do.
2423	Muzzle No. 18	Inside	38,000	73,840	16.0	21.4	Granular; flaky spot			Do.
2424	...do	Outside	41,000	76,360	17.7	21.4	Granular; dull spot			Do.
2425	...do	Middle	36,000	72,600	19.7	27.6	Granular, 40 per cent.; silky, 60 per cent.			Do.
2630	Breech No. 18	Inside	41,000	76,440	20.3	36.4	Silky; surface cracks			Additional specimen.
2631	...do	Outside	41,000	82,840	20.7	44.6	...do			Do.
2632	...do	Middle	42,000	78,800	20.3	41.9	...do			Do.
2633	Muzzle No. 18	Inside	44,000	80,800	13.7	30.6	Granular; flaky spot			Do.
2634	...do	Outside	41,000	82,800	17.0	30.6	Granular, 70 per cent.; silky, 30 per cent.			Do.
2635	...do	Middle	39,000	76,000	19.3	44.6	Silky			Do.
2689	...do	Inside	43,000	81,920	14.0	24.6	Granular; flaky spot			Do.

2690	....do	Outside	44,000	82,240	20.7	44.6	Silky; surface cracks			Do.
2691	....do	Middle	40,000	77,840	18.7	49.7	Silky			Do.
2170	Breech No. 19	Inside	35,000	74,040	20.7	39.2	......do			Do.
2171	....do	Outside	39,000	78,800	22.7	47.2	......do			Do.
2217	..do	Middle	35,000	76,480	21.3	36.4	......do			Do.
2173	Muzzle No. 19	Inside	41,000	80,080	22.3	44.0	......do			Do.
2174	....do	Outside	45,000	80,840	23.0	41.9	......do			Do.
2499	Breech No. 19	Inside	38,000	71,960	27.3	59.3	......do			New tube.
2500	....do	Outside	35,000	71,920	25.3	57.0	......do			Do.
2501	....do	Middle	35,000	67,280	30.7	57.0	Silky; surface cracks			Do.
2502	Muzzle No. 19	Inside	41,000	77,920	17.3	30.6	Granular, dull spot			Do.
2503	....do	Outside	41,000	76,800	26.3	54.6	Silky			Do.
2504	..do	Middle	39,000	75,040	33.7	54.6	......do			Do.
2624	Breech No. 19	Inside	41,000	76,720	23.3	44.6	Silky; surface cracks			Additional specimen.
2625	..do	Outside	37,000	75,800	23.3	41.9	Silky			Do.
2626	do	Middle	38,000	75,280	23.7	52.2	......do			Do.
2627	Muzzle No. 19	Inside	40,000	78,800	21.3	57.0	......do			Do.
2628	....do	Outside	46,000	83,600	20.7	49.7	......do			Do.
2629	..do	Middle	45,000	82,240	20.3	39.2	......do			Do.
1160	Breech No. 23	Inside	46,000	79,040	20.3	30.6	Granular; crack ".3 in surface			Do.
1161	Breech No. 26	Outside	40,000	77,000	10.7	15.0	Granular; dull metal at circumference			Do.
1162	Muzzle No. 26	Inside	45,000	84,760	22.3	49.7	Silky			Do.
2359	Breech No. 26	...do	41,000	68,640	28.0	65.8	......do			New tube.
2360	....do	Outside	41,000	69,200	29.7	59.3	......do			Do.
2361	...do	Middle	38,000	69,920	30.3	63.7	......do			Do.
2362	Muzzle No. 26	Inside	41,000	75,400	24.7	51.6	......do			Do.
2363	....do	Outside	40,000	74,000	23.7	52.2	......do			Do.
2364	...do	Middle	40,000	76,200	25.7	49.7	......do			Do.
2594	Breech No. 26	Inside	43,000	76,200	24.3	57.0	Fine silky			Additional specimen.
2595	....do	Outside	43,000	77,800	26.3	59.3	Silky			Do.
2596	....do	Middle	42,000	78,080	27.0	57.0	......do			Do.
2597	Muzzle No. 26	Inside	44,000	83,600	18.7	49.7	......do			Do.
2598	...do	Outside	42,000	81,760	22.3	49.7	......do			Do.
2599	...do	Middle	42,000	81,640	22.7	47.2	......do			Do.
2487	Breech No. 27	Inside	37,000	68,720	24.3	27.6	Granular; flaky spot			
2488	....do	Outside	39,000	72,080	27.0	49.7	Silky			
2489	...do	Middle	39,000	72,080	28.7	51.6	Silky; surface cracks			
2490	Muzzle No. 27	Inside	39,000	75,520	23.0	49.7	Silky			
2491	....do	Outside	41,000	79,120	26.0	44.6	......do			
2492	....do	Middle	41,000	80,800	22.0	36.4	.... do			
2636	Breech No. 27	Inside	42,000	78,320	20.0	39.2	Silky; surface cracks			Additional specimen.
2637	... do	Outside	39,000	77,520	26.7	54.6	.... do			Do.
2638	....do	Middle	40,000	77,240	25.7	54.6	Silky			Do.
2639	Muzzle No. 27	Inside	43,000	78,400	20.3	49.7	......do			Do.
2640	....do	Outside	43,000	82,440	19.3	39.2	Granular, 70 per cent.; silky, 30 per cent.			Do.
2641	....do	Middle	43,000	82,280	15.0	27.6	Granular; dull spot			Do.
2692	....do	Inside	42,000	82,880	22.7	47.2	Silky			Do.
2693	....do	Outside	45,000	82,720	23.7	49.7	.... do			Do.
2694	... do	Middle	41,000	80,200	16.0	18.3	Granular; flaky spot			Do.
1683	Breech No. 32	Inside	38,000	75,960	26.0	41.9	Silky			Do.
1684	....do	Outside	37,000	75,800	23.3	39.2	Granular; dull spot			Do.

TABULATION OF SPECIMENS FROM TUBES FOR 8-INCH CONVERTED RIFLES—Continued.

No. of test.	Position in gun.	Location of specimens.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.	Specific gravity.	Hardness.	Remarks.
			Pounds.	*Pounds.*	*Per cent.*	*Per cent.*				
1685	Breech No. 32	Middle	38,000	76,720	26.0	47.2	Silky			Additional specimen.
1686	Muzzle No. 32	Inside	47,000	81,160	14.3	21.4	Granular with dull-colored metal			Do.
1687	...do	Outside	45,000	82,080	21.3	41.9	Granular; dull-center			Do.
1688	...do	Middle	42,000	80,760	16.7	27.6	Granular; dull-colored spot			Do.
2347	...do	Inside	34,000	72,640	18.3	27.6	Granular; flaky spot			Do.
2348	...do	Outside	38,000	75,840	22.7	33.5	Granular; dull spot			Do.
2349	...do	Middle	35,000	73,520	13.7	21.4	Granular			Do.
2668	Breech No. 32	Inside	35,000	72,440	29.3	49.7	Silky			New tube.
2669	...do	Outside	36,000	76,960	25.7	54.6	...do			Do.
2670	...do	Middle	35,000	74,800	25.3	49.7	...do			Do.
2671	Muzzle No. 32	Inside	41,000	79,920	20.3	49.7	...do			Do.
2672	...do	Outside	42,000	82,000	22.0	47.2	...do			Do.
2673	...do	Middle	38,000	76,600	22.3	49.7	...do			Do.
1001	Breech No. 35	Inside	37,000	73,040	27.7	49.7	...do	7.8552	11.49	
1002	...do	Outside	41,000	75,800	25.3	52.2	...do			
1003	...do	Middle	38,000	75,200	26.0	52.2	...do			
1004	Muzzle No. 35	Inside	46,000	78,000	21.3	41.9	Silky, 50 per cent.; granular, 50 per cent.	7.8517	13.65	
1005	...do	Outside	44,000	79,200	26.3	49.7	Silky			
1006	...do	Middle	40,000	77,480	26.3	49.7	...do			
1007	Breech No. 36	Inside	38,000	72,200	27.0	54.6	...do	7.8577	11.92	
1008	...do	Outside	42,000	78,280	27.0	44.6	...do			
1009	...do	Middle	39,000	75,440	24.7	44.6	...do			
1010	Muzzle No. 36	Inside	42,000	78,440	21.7	33.5	Granular, 60 per cent.; silky, 40 per cent.	7.8556	13.33	
1011	...do	Outside	43,000	79,560	27.0	47.2	Silky with fine granulation			
1012	...do	Middle	41,000	77,400	19.7	24.6	Granular; dull spot			
2122	...do	Inside	38,000	79,360	23.0	39.2	Silky, 90 per cent.; granular, 10 per cent.			Additional specimen.
2123	...do	Outside	38,000	77,000	22.3	44.6	Silky			Do.
2124	...do	Middle	40,000	76,000	22.3	41.9	Silky; slight granulation			Do.
992	Breech No. 37	Inside	43,000	77,760	20.7	27.6	Granular, dull spot			
992½	...do	Outside	38,000	76,520	21.7	36.4	Silky, 90 per cent.; granular, 10 per cent.			
993	...do	Middle	37,000	78,160	20.0	24.6	Granular; dull spot			
994	Muzzle No. 37	Inside	41,000	79,280	17.3	18.3	...do			
995	...do	Outside	41,000	77,960	30.3	47.2	Fine silky			
996	...do	Middle	41,000	82,320	18.0	18.3	Dull-colored, furrowed surface; small granular section			
2128	Breech No. 37	Inside	43,000	72,240	24.3	44.6	Silky			Additional specimen.
2129	...do	Outside	47,000	78,000	23.3	39.2	Silky; surface cracks			Do.

2130	....do	Middle	41, 000	73, 960	21. 3	33. 5	Granular, 50 per cent.; silky, 50 per cent.	....	....	Do.
2131	Muzzle No. 37	Inside	43, 000	72, 120	27. 7	47. 2	Silky; surface cracks	....	....	Do.
2132	....do	Outside	43, 000	74, 800	28. 3	54. 6	Silky	....	....	Do.
2133	....do	Middle	41, 000	73, 560	27. 3	44. 0	Silky; traces of granulation	....	....	Do.
2092	Breech No. 38	Inside	44, 000	79, 640	25. 0	54. 6	Silky	....	....	
2093	....do	Outside	46, 000	86, 200	23. 7	49. 7	....do	....	....	
2094	....do	Middle	41, 000	76, 560	26. 7	52. 2	......do	....	....	
2095	Muzzle No. 38	Inside	42, 000	82, 440	24. 3	49. 7	......do	....	....	
2096	....do	Outside	40, 000	79, 840	23. 0	49. 7	......do	....	....	
2097	... do	Middle	44, 000	85, 200	25. 7	47. 2	Silky; trace of granulation	....	....	
2134	Breech No. 39	Inside	46, 000	75, 480	27. 0	57. 0	Silky; surface cracks	....	....	
2135	....do	Outside	41, 000	73, 400	26. 0	39. 2	.... do	....	....	
2136	....do	Middle	42, 000	74, 720	24. 7	47. 2	......do	....	....	
2137	Muzzle No. 39	Inside	45, 000	76, 160	23. 3	49. 7	......do	....	....	
2138	....do	Outside	41, 000	75, 480	16. 7	24. 6	Granular; dull spot	....	....	
2139	....do	Middle	42, 000	76, 880	19. 3	24. 6	......do	....	....	
2484	....do	Inside	43, 000	76, 000	24. 3	54. 6	Silky	....	....	Additional specimen.
2485	....do	Outside	44, 000	77, 400	20. 0	41. 9	Silky; slight granulation	....	....	Do.
2486	....do	Middle	42, 000	75, 760	22. 3	30. 6	Granular; dull spot	....	....	Do.
1129	Breech No. 40	Inside	40, 000	72, 720	26. 7	47. 2	Silky	7. 8556	11. 92	
1130	... do	Outside	40, 000	74, 960	25. 3	44. 6	......do	....	....	
1131	.. do	Middle	35, 000	71, 680	23. 3	49. 7	......do	....	....	
1132	Muzzle No. 40	Inside	34, 000	72, 800	24. 0	41. 9	......do	7. 8528	11. 59	
1133	....do	Outside	36, 000	77, 120	23. 7	24. 6	Granular; flaky spot	....	....	
1134	...do	Middle	35, 000	76, 000	23. 7	36. 4	Silky	....	....	
2098	Breech No. 41	Inside	40, 000	76, 760	29. 7	59. 3	......do	....	....	
2099	....do	Outside	44, 000	82, 400	16. 7	24. 6	Granular; dull spot	....	....	
2100	....do	Middle	41. 000	79, 640	24. 3	47. 2	Silky; trace of granulation	....	....	
2101	Muzzle No. 41	Inside	48, 000	87, 640	13. 3	44. 6	Granular; small dull spot	....	....	
2102	... do	Outside	50, 000	87, 960	19. 3	39. 2	Granular; dull spot	....	....	
2103	....do	Middle	47, 000	80, 320	17. 3	39. 2	Granular; dull center	....	....	
2478	Breech No. 41	Inside	39, 000	74, 600	27. 0	57. 0	Silky	....	....	Additional specimen.
2479	....do	Outside	43. 000	78, 240	24. 3	54. 6	......do	....	....	Do.
2480	... do	Middle	40, 000	75, 400	26. 0	57. 0	......do	....	....	Do.
2481	Muzzle No. 41	Inside	44, 000	77, 120	16. 7	21. 4	Granular; flaky spot	....	....	Do.
2482	....do	Outside	44, 000	76, 240	24. 3	47. 2	Silky	....	....	Do.
2483	....do	Middle	43, 000	77, 400	23. 3	49. 7	..... do	....	....	Do.
2558	... do	Inside	43, 000	76, 000	20. 0	41. 9	......do	....	....	Do.
2559	... do	Outside	39, 000	75, 640	27. 3	52. 2	......do	....	....	Do.
2560	....do	Middle	38, 000	76, 560	17. 7	24. 6	Granular; flaky spot	....	....	Do.
1135	Breech No. 42	Inside	38, 000	73, 600	24. 0	36. 4	Silky; surface cracks	7. 8590	12. 36	
1136	....do	Outside	39, 000	74, 440	28. 3	57. 0	Silky	....	....	
1137	...do	Middle	35, 000	71, 520	26. 7	44. 6	Silky; surface cracks	....	....	
1138	Muzzle No. 42	Inside	40, 000	78, 880	22. 0	47. 2	Silky	7. 8544	14. 98	
1139	Muzzle No. 42	Outside	42, 000	80, 560	24. 3	47. 2	......do	....	....	
1140	....do	Middle	36, 000	76, 080	20. 0	21. 4	Granular; dull, flaky spot	....	....	
1141	Breech No. 43	Inside	40, 000	74, 800	25. 0	49. 7	Silky	7. 8571	12. 72	
1142	....do	Outside	40, 000	76, 040	24. 0	52. 2	......do	....	....	
1143	.. do	Middle	39, 000	75, 040	29. 0	54. 6	......do	....	....	
1144	Muzzle No. 43	Inside	37, 000	78, 440	23. 3	39. 2	Silky; slightly granular	7. 8587	12. 78	
1145	....do	Outside	38, 000	75, 920	24. 3	39. 2	Silky	....	....	

TABULATION OF SPECIMENS FROM TUBES FOR 8-INCH CONVERTED RIFLES—Continued.

No. of test.	Position in gun.	Location of specimens.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.	Specific gravity.	Hardness.	Remarks.
			Pounds.	*Pounds.*	*Per cent.*	*Per cent.*				
1146	Muzzle No. 43	Middle	37,000	78,680	20.3	21.4	Granular; dull flaky spot			
2152	Breech No. 44	Inside	40,000	75,400	17.7	47.2	Granular, 70 per cent.; dull silky, 30 per cent.	7.8568	12.36	
2153	do	Outside	44,000	77,600	26.0	52.2	Silky			
2154	do	Middle	41,000	78,000	26.3	52.2	do			
2155	Muzzle No. 44	Inside	46,000	81,640	15.7	21.4	Granular; dull spot			
2156	do	Outside	43,000	78,080	24.3	49.7	Silky			
2157	do	Middle	39,000	76,400	17.7	24.6	Granular; dull spot			
2723	Breech No. 44	Inside	41,000	81,000	22.7	52.2	Silky			New tube.
2724	do	Outside	41,000	83,000	22.3	49.7	do			Do.
2725	do	Middle	41,000	76,000	25.7	52.2	do			Do.
2726	Muzzle No. 44	Inside	42,000	80,000	21.0	33.5	Granular; flaky streak			Do.
2727	do	Outside	43,000	81,000	14.3	18.3	do			Do.
2728	do	Middle	41,000	81,200	23.3	47.2	Silky			Do.
2768	do	Inside	42,000	80,080	15.7	21.4	Granular; flaky spot			Additional specimen.
2769	do	Outside	44,000	82,000	20.3	30.6	Silky			Do.
2770	do	Middle	42,000	80,640	21.7	49.7	do			Do.
2104	Breech No. 45	Inside	40,000	74,040	27.0	44.6	Silky; surface cracks	7.8583	12.42	
2105	do	Outside	41,000	76,480	24.3	47.2	do			
2106	do	Middle	39,000	72,360	26.7	49.7	do			
2107	Muzzle No. 45	Inside	43,000	80,000	22.3	41.9	Silky			
2108	do	Outside	40,000	75,880	22.3	49.7	do			
2109	do	Middle	35,000	72,840	24.7	33.5	Silky; surface cracks			
2110	Breech No. 46	Inside	44,000	75,680	24.7	57.0	Silky	7.8632	12.14	
2111	do	Outside	40,000	74,760	25.7	52.2	do			
2112	do	Middle	39,000	73,040	27.0	57.0	do			
2113	Muzzle No. 46	Inside	45,000	82,840	19.7	36.4	Granular; dull spot			
2114	do	Outside	43,000	81,200	20.0	24.6	do			
2115	do	Middle	40,000	78,680	25.7	44.6	Silky			
2356	do	Inside	43,000	80,800	25.7	52.2	do			Additional specimen.
2357	do	Outside	42,000	81,600	19.0	27.6	Granular; dull spot			Do.
2358	do	Middle	41,000	81,040	19.7	24.6	Granular; dull metal			Do.
2434	Breech No. 46	Inside	43,000	75,240	28.7	59.3	Silky			Do.
2435	Muzzle No. 46	do	40,000	76,800	23.0	52.2	do			Do.
2436	do	Outside	35,000	73,240	21.7	36.4	Granular; flaky spot			Do.
2437	do	Middle	34,000	73,120	23.3	30.6	do			
2116	Breech No. 47	Inside	42,000	74,440	27.7	54.6	Silky; surface cracks	7.8607	11.81	
2117	do	Outside	39,000	70,520	28.8	54.6	Silky			
2118	do	Middle	38,000	69,200	28.0	54.6	Silky; surface cracks			
2119	Muzzle No. 47	Inside	39,000	72,240	29.3	49.7	do			
2120	do	Outside	41,000	72,680	26.7	44.6	do			

2121	....do	Middle	35,000	73,560	23.3	36.4	Silky			
2158	Breech No. 48	Inside	35,000	68,200	27.7	41.9	Granular, 50 per cent.; silky, 50 per cent.	7.8586	10.01	
2159	....do	Outside	37,000	72,640	22.7	41.9	Silky			
2160	....do	Middle	37,000	71,720	26.0	47.2	......do			
2161	Muzzle No. 48	Inside	40,0.0	75,920	15.0	18.3	Granular, 15 per cent.; dull flaky, 85 per cent.			
2162	....do	Outside	38,000	72,800	24.0	41.9	Silky			
2163	...do	Middle	37,000	71,520	23.3	39.2	......do			
2493	Breech No. 48	Inside	39,000	71,010	29.7	59.3	......do			Additional specimen.
2494	....do	Outside	37,000	70,000	28.7	57.0	.... do			Do.
2495	....do	Middle	36,000	70,360	25.7	41.9	......do			Do.
2496	Muzzle No. 48	Inside	39,000	74,040	20.3	30.6	Granular; dull flaky spot			Do.
2497	....do	Outside	38,000	72,640	28.0	49.7	Silky			Do.
2498	....do	Middle	37,000	72,400	25.7	52.2	......do			Do.
2713	Breech No. 48	Inside	49,000	81,920	21.7	47.2	Silky; surface cracks			Do.
2717	.. do	....do	50,000	84,950	25.0	51.9	Silky			Do.
2718	....do	....do	49,000	82,500	23.5	43.3	......do			Do.
2719	.. do	Outside	54,000	85,500	25.0	49.1	Silky; surface cracks			Do.
2714	Muzzle No. 48	Inside	51,000	86,600	13.3	21.4	Granular			Do.
2715	.. do	Outside	49,000	85,600	19.3	44.6	Silky			Do.
2716	....do	Middle	50,000	88,210	21.3	46.3	......do			Do.
2735	.. do	Inside	41,000	80,200	20.0	52.2	......do			Do.
2736	.. do	Outside	42,000	78,720	25.7	49.7	......do			Do.
2737	....do	Middle	42,000	82,100	22.7	36.4	Granular, 60 per cent.; silky, 40 per cent.			Do.
2140	Breech No. 49	Inside	36,000	71,200	20.7	49.7	Silky	7.8598	10.60	
2141	.. do	Outside	35,000	71,600	26.7	49.7	Silky; trace of granulation			
2142	.. do	Middle	43,000	78,320	25.0	49.7	Silky			
2143	Muzzle No. 49	Inside	37,000	75,560	26.7	52.2	.....do			
2144	.. do	Outside	43,000	80,000	20.0	30.6	Granular, 60 per cent.; dull silky, 40 per cent.			
2145	.. do	Middle	36,000	73,680	19.3	36.4	Granular, 80 per cent.; dull silky, 20 per cent.			
2371	....do	Inside	41,000	78,640	22.3	41.9	Granular; dull spot			Additional specimen.
2372	.. do	Outside	37,000	73,920	21.7	27.6	Granular, 80 per cent.; dull silky, 20 per cent.			Do.
2373	.. do	Middle	40,000	78,880	20.7	30.6	Granular; dull spot			Do.
2175	Breech No. 50	Inside	39,000	74,200	23.7	49.7	Silky	7.8584	12.72	
2176	.. do	Outside	39,000	76,200	22.7	36.4	Granular; dull spot			
2177	.. do	Middle	34,000	71,480	26.7	36.4	Granular, 40 per cent.; silky, 60 per cent.			
2178	Muzzle No. 50	Inside	36,000	76,040	19.3	24.6	Granular; dull spot			
2179	.. do	Outside	38,000	77,680	23.3	36.4	Silky; slightly granular			
2180	.. do	Middle	43,000	80,240	15.7	18.3	Granular, 50 per cent.; dull flaky, 50 per cent.			
2534	Breech No. 50	Inside	35,000	72,640	22.3	21.4	Granular; surface cracks			Additional specimen.
2535	.. do	Outside	38,000	73,540	29.0	57.0	Silky			Do.
2536	...do	Middle	35,000	74,880	23.3	33.5	......do			Do.
2537	Muzzle No. 50	Inside	38,000	76,400	20.3	33.5	Granular, 60 per cent.; silky, 40 per cent.			Do.
2538	....do	Outside	38,000	76,600	25.7	47.2	Silky; slight granulation			Do.

TABULATION OF SPECIMENS FROM TUBES FOR 8-INCH CONVERTED RIFLES—Continued.

No. of test.	Position in gun.	Location of specimens.	Elastic limit per square inch.	Tensile strength per square inch.	Elongation.	Contraction of area.	Appearance of fracture.	Specific gravity.	Hardness.	Remarks.
			Pounds.	*Pounds.*	*Per cent.*	*Per cent.*				
2539	Muzzle No. 50	Middle	37,000	73,440	23.7	33.5	Granular; dull flaky spot			Additional specimen.
2729	Breech No. 50	Inside	46,000	80,000	13.0	21.4	do			Do.
2730	do	Outside	53,000	87,200	19.7	41.9	Silky; trace of granulation			Do.
2731	do	Inside	49,000	83,500	22.5	43.3	Silky; surface cracks			Do.
2732	Muzzle No. 50	do	50,000	86,000	14.7	18.3	Granular; flaky spot			Do.
2733	do	Outside	46,000	84,000	18.0	24.6	do			Do.
2734	do	Middle	49,000	82,400	7.0	11.8	do			Do.

REJECTED TUBE NO. 15, 8-INCH CONVERTED RIFLE.

Steel specimens taken from muzzle end, after a piece of the tube 15 nches long had been heated by pouring molten cast-iron about it. Earlier tests from this tube published in Report of Tests, 1885.

See Chief of Ordnance Report, 1885. Appendix 30.

REJECTED TUBE NO. 15, 8-INCH CONVERTED RIFLE.

No. 1026.

Marks, $\overset{8\ T_{15}}{M\ T_4\ I}$

Diameter, ″.563.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000200	.000100	0.	....	
3,750	15,000	.000367	.000167	0.	....	
5,000	20,000	.000533	.000166	0.	....	
6,250	25,000	.000633	.000100	— .000033	.000033	
7,500	30,000	.000800	.000167	— .000033	0.	
8,750	35,000	.001000	.000200	— .000033	0.	
10,000	40,000	.001133	.000133	— .000033	0.	
11,250	45,000	.001267	.000134	0.	.000033	Elastic limit.
11,500	46,000	.001367	.000100	....	....	
11,750	47,000	.003110	.001733	....	....	
12,000	48,000	.004100	.001000	....	....	
12,250	49,000	.004900	.000800	....	....	
12,500	50,000	.009033	.004133	.007333	.007333	
12,750	51,000	.009667	.000634	....	....	
13,000	52,000	.010333	.000666	....	....	
13,250	53,000	.011400	.001067	....	....	
13,500	54,000	.013100	.001700	....	....	
13,750	55,000	.014333	.001233	....	....	
14,000	56,000	.015800	.001467	....	....	
14,250	57,000	.017100	.001300	....	....	
14,500	58,000	.018400	.001300	....	....	
14,750	59,000	.020167	.001767	....	....	
15,000	60,000	.022000	.001833	....	....	
15,500	62,000	.025033	.003033	....	....	
16,000	64,000	.028367	.003334	....	....	
16,500	66,000	.033667	.005300	....	....	
17,000	68,000	.038333	.004666	....	....	
17,500	70,000	.044667	.003634	....	....	
18,000	72,000	.0533	.008633	....	....	
18,500	74,000	.0633	.0100	....	....	
19,000	76,000	.0733	.0100	....	....	
19,500	78,000	.1000	.0267	....	....	
19,620	78,480	.1367	.0367	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	78,480
Elastic limit per square inch of original section	do...	45,000
Elongation per inch after rupture	inch..	0.2100
Elongation per inch under strain at elastic limit	do...	.001267
Reduction in diameter at point of rupture	do...	.184
Reduction in area after rupture, per centum of original section		54.6
Position of rupture		¾ inch from neck
Character of broken surface		silky
Elongation of inch sections		″.43*, ″.12, ″.08

No. 1027.

Marks, $^{8\,T_{15}}_{M\,T_{50}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000200	.000100	0.	....	
3,750	15,000	.000367	.000167	0.	....	
5,000	20,000	.000533	.000166	0.	....	
6,250	25,000	.000700	.000167	0.	....	
7,500	30,000	.000867	.000167	0.	....	
8,750	35,000	.001033	.000166	0.	....	
10,000	40,000	.001200	.000167	0.	....	
10,250	41,000	.001233	.000033	....	....	
10,500	42,000	.001267	.000034	....	....	
10,750	43,000	.001300	.000033	....	....	Elastic limit.
11,000	44,000	.001400	.000100	....	....	
11,250	45,000	.006633	.005233	.004967	.004967	
11,500	46,000	.007667	.001034	....	....	
11,750	47,000	.008500	.000833	....	....	
12,000	48,000	.009167	.000667	....	....	
12,250	49,000	.010067	.000900	....	....	
12,500	50,000	.011367	.001300	.000567	.004600	
12,750	51,000	.012000	.000633	....	....	
13,000	52,000	.012767	.000767	....	....	
13,250	53,000	.014067	.001300	....	....	
13,500	54,000	.015433	.001366	....	....	
13,750	55,000	.016667	.001234	....	....	
14,000	56,000	.018067	.001400	....	....	
14,250	57,000	.019500	.001433	....	....	
14,500	58,000	.020767	.001267	....	....	
14,750	59,000	.022067	.001300	....	....	
15,000	60,000	.023767	.001700	....	....	
15,500	62,000	.027000	.003233	....	....	
16,000	64,000	.030267	.003267	....	....	
16,500	66,000	.034267	.004000	....	....	
17,000	68,000	.038667	.004400	....	....	
17,500	70,000	.043667	.005000	....	....	
18,000	72,000	.0533	.009633	....	....	
18,500	74,000	.0633	.0100	....	....	
19,000	76,000	.0733	.0100	....	....	
19,500	78,000	.0900	.0167	....	....	
20,000	80,000	.1200	.0300	....	....	
20,060	80,240	.1667	.0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80,240
Elastic limit per square inch of original section	do...	43,000
Elongation per inch after rupture	inch..	0.2433
Elongation per inch under strain at elastic limit	do...	.001300
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44.6
Position of rupture		¾ inch from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.21, ″.40-, ″.12

No. 1028.

Marks, $^{8\,T_{14}}_{M\,T.\,O}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000100	.000100	0.	....	
2, 500	10, 000	.000300	.000200	0.	....	
3, 750	15, 000	.000433	.000133	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.000933	.000166	0.	....	
8, 750	35, 000	.001067	.000134	....	....	
9, 000	36, 000	.001100	.000033	....	....	
9, 250	37, 000	.001133	.000033	....	....	
9, 500	38, 000	.001200	.000067	....	....	
9, 750	39, 000	.001267	.000067	....	....	
10, 000	40, 000	.001333	.000066	.000067	.000067	Elastic limit.
10, 250	41, 000	.002733	.001400	....	....	
10, 500	42, 000	.003600	.000867	....	....	
10, 750	43, 000	.003900	.000300	....	....	
11, 000	44, 000	.004867	.000967	....	....	
11, 250	45, 000	.005833	.000966	.004267	.001200	
11, 500	46, 000	.006667	.000834	....	....	
11, 750	47, 000	.008667	.002000	....	....	
12, 000	48, 000	.010333	.001666	....	....	
12, 250	49, 000	.011333	.001000	....	....	
12, 500	50, 000	.012433	.001100	.010667	.006400	
12, 750	51, 000	.013067	.000634	....	....	
13, 000	52, 000	.014167	.001100	....	....	
13, 250	53, 000	.015500	.001333	....	....	
13, 500	54, 000	.017133	.001633	....	....	
13, 750	55, 000	.018267	.001134	....	....	
14, 000	56, 000	.019567	.001300	....	....	
14, 250	57, 000	.021067	.001500	....	....	
14, 500	58, 000	.022667	.001600	....	....	
14, 750	59, 000	.023967	.001300	....	....	
15, 000	60, 000	.025800	.001833	....	....	
15, 500	62, 000	.029667	.003867	....	....	
16, 000	64, 000	.033167	.003500	....	....	
16, 500	66, 000	.037667	.004500	....	....	
17, 000	68, 000	.042833	.005166	....	....	
17, 500	70, 000	.049000	.006167	....	....	
18, 000	72, 000	.0567	.0077	....	....	
18, 500	74, 000	.0700	.0133	....	....	
19, 000	76, 000	.0900	.0200	....	....	
19, 400	77, 600	.1300	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	77, 600
Elastic limit per square inch of original section	do...	40, 000
Elongation per inch after rupture	inch..	0. 1900
Elongation per inch under strain at elastic limit	do ..	001333
Reduction in diameter at point of rupture	do...	.174
Reduction in area after rupture, per centum of original section		52. 2
Position of rupture		½ inch from neck; oblique
Character of broken surface		silky
Elongation of inch sections		″.40*, ″.09, ″.08

No. 1029.

Marks, $^{8\ T_{18}}_{M\ T_7\ M}$
Diameter, ″.563.
Sectional area, .25 square inch.

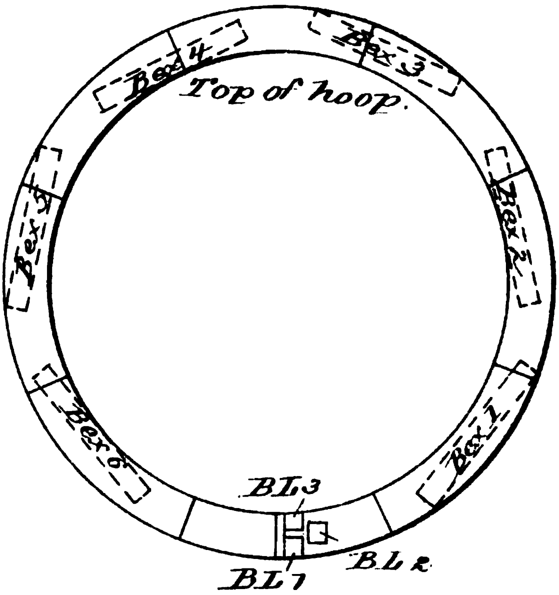
Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000900	.000133	0.	....	
8,750	35,000	.001067	.000167	0.	....	
10,000	40,000	.001233	.000166	0.	....	
10,250	41,000	.001267	.000034	....	....	
10,500	42,000	.001300	.000033	....	....	
10,750	43,000	.001367	.000067	....	....	Elastic limit.
11,000	44,000	.002100	.000733	....	....	
11,250	45,000	.004533	.002433	.003100	.003100	
11,500	46,000	.006300	.001767	....	....	
11,750	47,000	.006800	.000500	....	....	
12,000	48,000	.007867	.001067	....	....	
12,250	49,000	.008767	.000900	....	....	
12,500	50,000	.009800	.001033	.007933	.004833	
12,750	51,000	.010433	.000633	....	....	
13,000	52,000	.011100	.000667	....	....	
13,250	53,000	.012133	.001033	....	....	
13,500	54,000	.013400	.001267	....	....	
13,750	55,000	.014600	.001200	....	....	
14,000	56,000	.015867	.001267	....	....	
14,250	57,000	.016900	.001033	....	....	
14,500	58,000	.018233	.001333	....	....	
14,750	59,000	.019200	.000967	....	....	
15,000	60,000	.020800	.001600	....	....	
15,500	62,000	.023800	.003000	....	....	
16,000	64,000	.026567	.002767	....	....	
16,500	66,000	.030267	.003700	....	....	
17,000	68,000	.033733	.003466	....	....	
17,500	70,000	.038000	.004267	....	....	
18,000	72,000	.044667	.006667	....	....	
18,500	74,000	.051333	.006666	....	....	
19,000	76,000	.0567	.005367	....	....	
19,500	78,000	.0700	.0133	....	....	
20,000	80,000	.0867	.0167	....	....	
20,500	82,000	.1233	.0366	....	....	
20,590	82,360	.1500	.0267	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section .... pounds..	82,360
Elastic limit per square inch of original section .... do...	43,000
Elongation per inch after rupture .... inch..	0.2133
Elongation per inch under strain at elastic limit .... do...	.001367
Reduction in diameter at point of rupture .... do...	.153
Reduction in area after rupture, per centum of original section	47.2
Position of rupture	⅝ inch from neck
Character of broken surface	silky
Elongation of inch sections	″.36*, ″.15, ″.13

8" Steel B. L. Rifle

Hoop Bx Experimental section



Three specimens through width of hoop.

H Ex 31 .. 49 2

ADDITIONAL SPECIMENS FROM HOOP BX, AFTER UNHOOPING.

No. 2187.

Marks, B L_1
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000367	.000200	0.	....	
3,750	15,000	.000533	.000166	0.	....	
5,000	20,000	.000700	.000167	.000033	.000033	
6,250	25,000	.000867	.000167	.000033	0.	
7,500	30,000	.001000	.000133	.000033	0.	
8,750	35,000	.001167	.000167	.000033	0.	
10,000	40,000	.001367	.000200	.000033	0.	
10,250	41,000	.001400	.000033	....	....	
10,500	42,000	.001433	.000032	....	....	
10,750	43,000	.001433	0.	....	....	
11,000	44,000	.001467	.000034	....	....	
11,250	45,000	001533	.000066	.000033	0.	
11,500	46,000	.001600	.000067	....	....	
11,750	47,000	.001667	.000067	....	....	Elastic limit.
12,000	48,000	.001767	.000100	....	....	
12,250	49,000	.002000	.000233	....	....	
12,500	50,000	.002467	.000467	.000800	.000767	
12,750	51,000	.002833	.000366	....	....	
13,000	52,000	.003167	.000334	....	....	
13,250	53,000	.003633	.000466	....	....	
13,500	54,000	.004433	.000800	....	....	
13,750	55,000	.005033	.000600	....	....	
14,000	56,000	.006233	.001200	....	....	
14,250	57,000	.006800	.000567	....	....	
14,500	58,000	.007667	.000867	....	....	
14,750	59,000	.008267	.000600	....	....	
15,000	60,000	.009000	.000733	....	....	
15,500	62,000	.010667	.001667	....	....	
16,000	64,000	.012167	.001500	....	....	
16,500	66,000	.013833	.001666	....	....	
17,000	68,000	.015667	.001834	....	....	
17,500	70,000	.017600	.001933	....	....	
18,000	72,000	.019333	.001733	....	....	
18,500	74,000	.021667	.002334	....	....	
19,000	76,000	.024000	.002333	....	....	
19,500	78,000	.026333	.002333	....	....	
20,000	80,000	.028833	.002500	....	....	
20,500	82,000	.031667	.002834	....	....	
21,000	84,000	.034667	.003000	....	....	
21,500	86,000	.038167	.003500	....	....	
22,000	88,000	.042333	.004166	....	....	
22,500	90,000	.047333	.005000	....	....	
23,000	92,000	.0533	.005967	....	....	
23,500	94,000	.0633	.0100	....	....	
24,000	96,000	.0733	.0100	....	....	
24,500	98,000	.0933	.0200	....	....	
24,810	99,240	.1300	.0367	....	....	Tensile strength.

General summary.

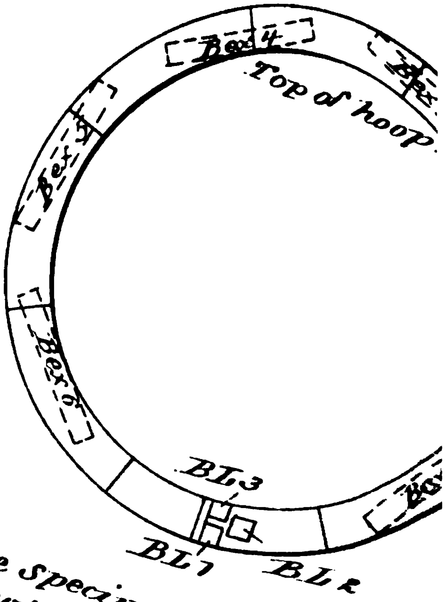
Tensile strength per square inch of original section	pounds..	99,240
Elastic limit per square inch of original section	do...	47,000
Elongation per inch after rupture	inch..	0.2000
Elongation per inch under strain at elastic limit	do...	.001667
Reduction in diameter at point of rupture	do...	.104
Reduction in area after rupture, per centum of original section		33.5
Position of rupture		⅛ inch from middle of stem
Character of broken surface		granular; dull spot near circumference
Elongation of inch sections		".15, ".32*, ".13

Marks, $\overset{8\ T_{18}}{M\ T_7\ M}$
Diameter, ".5
Sectional are

Applied loads.	
Total.	Per sq inc
Pounds.	Po
250	
1, 250	1
2, 500	
3, 750	
5, 000	
6, 250	
7, 500	
8, 750	
10, 000	
10, 250	
10, 500	
10, 750	
11, 000	
11, 250	
11, 500	
11, 750	
12, 000	
12, 250	
12, 500	
12, 750	
13, 000	
13, 25	
13, 50	
13, 7	
14, 0	
14, 2	
14,	
14,	
15,	
15,	
16	
1	
1	
1	
1	

8" Steel B.L.

Hoop Bx Experimen



Three Specimens through width of hoop.

H Ex. 3 / 49 2

SPECIMENS FROM HOOP BX. AFTER UNHOOPING.

No. 2187.

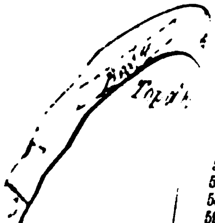
S. Steel B.L. 564.

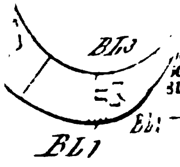
a, .25 square inch.

Hoop B.x Experiments

uare h.	Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks
Pounds.	Inch.	Inch.	Inch.	Inch.	
1,000	0.	0.	0.	0.	Initial load
5,000	.000167	.000167	0	....	
10,000	.000367	.000200	0.	....	
15,000	.000533	.000166	0.	....	
20,000	.000700	.000167	.000033	.000033	
25,000	.000867	.000167	.000033	0.	
30,000	.001000	.000133	.000033	0.	
35,000	.001167	.000167	.000033	0.	
40,000	.001367	.000200	.000033	0.	
41,000	.001400	.000033	....	....	
42,000	.001433	.000032	....	....	
43,000	.001433	0.	....	....	
44,000	.001467	.000034	....	....	
45,000	.001533	.000066	.000033	0.	
46,000	.001600	.000067	....	....	
47,000	.001667	.000067	....	....	
48,000	.001767	.000100	....	....	
49,000	.002000	.000233	....	....	
50,000	.002467	.000467	.000600	.00067	Elastic lim
51,000	.002833	.000366	....	....	
52,000	.003167	.000334	....	....	
53,000	.003633	.000468	....	....	
54,000	.004433	.000800	....	....	
55,000	.005033	.000600	....	....	
56,000	.006233	.001200	....	....	
57,000	.006800	.000567	....	....	
58,000	.007667	.000867	....	....	
59,000	.008267	.000600	....	....	
60,000	.009000	.000733	....	....	
62,000	.010667	.001667	....	....	
64,000	.012167	.001500	....	....	
66,000	.013833	.001666	....	....	
68,000	.015667	.001834	....	....	
70,000	.017600	.001933	....	....	
72,000	.019333	.001733	....	....	
74,000	.021667	.002334	....	....	
76,000	.024000	.002333	....	....	
78,000	.026333	.002333	....	....	
80,000	.028833	.002500	....	....	
82,000	.031667	.002834	....	....	
84,000	.034667	.003000	....	....	
86,000	.038167	.003500	....	....	
88,000	.042333	.004166	....	....	
90,000	.047333	.005000	....	....	
92,000	.0533	.005967	....	....	
94,000	.0633	.0100	....	....	
96,000	.0733	.0100	....	....	
98,000	.0933	.0200	....	....	
99,240	.1300	.0367	....	....	Tensile strength

not well





General summary.

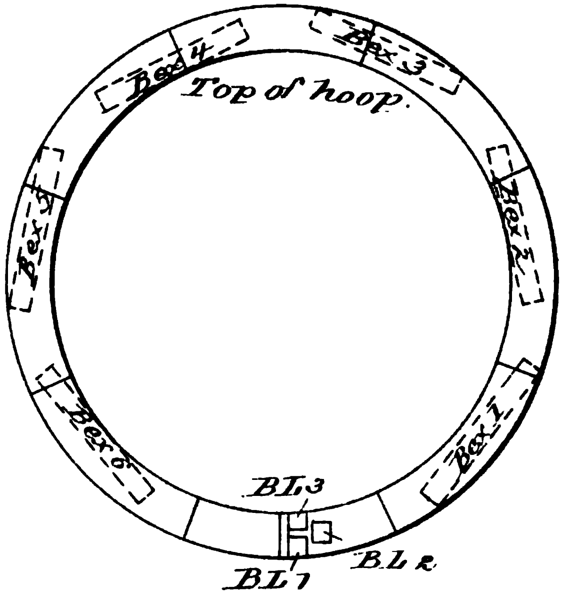
o strength per square inch of original section ....
3 limit per square inch of original section........
ation per inch after rupture ....
ation per inch under strain at elastic limit .... per
ction in diameter at point of rupture ....
ction in area after rupture, per centum of original section ....
ion of rupture........
acter of broken surface........
gation of inch sections........

Specimens from ... of hoop

492

8" Steel B. L. Rifle

Hoop Bx Experimental section



Three specimens through width of hoop.

H Ex 31 .. 49 2

ADDITIONAL SPECIMENS FROM HOOP BX, AFTER UNHOOPING.

No. 2187.

Marks, B L_1
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	**Initial load.**
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000367	.000200	0.	....	
3, 750	15, 000	.000533	.000166	0.	....	
5, 000	20, 000	.000700	.000167	.000033	.000033	
6, 250	25, 000	.000867	.000167	.000033	0.	
7, 500	30, 000	.001000	.000133	.000033	0.	
8, 750	35, 000	.001167	.000167	.000033	0.	
10, 000	40, 000	.001367	.000200	.000033	0.	
10, 250	41, 000	.001400	.000033	....	....	
10, 500	42, 000	.001433	.000032	....	....	
10, 750	43, 000	.001433	0.	....	....	
11, 000	44, 000	.001467	.000034	....	....	
11, 250	45, 000	001533	.000066	.000033	0.	
11, 500	46, 000	.001600	.000067	....	....	
11, 750	47, 000	.001667	.000067	....	....	**Elastic limit.**
12, 000	48, 000	.001767	.000100	....	....	
12, 250	49, 000	.002000	.000233	....	....	
12, 500	50, 000	.002467	.000467	.000800	.000767	
12, 750	51, 000	.002833	.000366	....	....	
13, 000	52, 000	.003167	.000334	....	....	
13, 250	53, 000	.003633	.000466	....	....	
13, 500	54, 000	.004433	.000800	....	....	
13, 750	55, 000	.005033	.000600	....	....	
14, 000	56, 000	.006233	.001200	....	....	
14, 250	57, 000	.006800	.000567	....	....	
14, 500	58, 000	.007667	.000867	....	....	
14, 750	59, 000	.008267	.000600	....	....	
15, 000	60, 000	.009000	.000733	....	....	
15, 500	62, 000	.010667	.001667	....	....	
16, 000	64, 000	.012167	.001500	....	....	
16, 500	66, 000	.013833	.001666	....	....	
17, 000	68, 000	.015667	.001834	....	....	
17, 500	70, 000	.017600	.001933	....	....	
18, 000	72, 000	.019333	.001733	....	....	
18, 500	74, 000	.021667	.002334	....	....	
19, 000	76, 000	.024000	.002333	....	....	
19, 500	78, 000	.026333	.002333	....	....	
20, 000	80, 000	.028833	.002500	....	....	
20, 500	82, 000	.031667	.002834	....	....	
21, 000	84, 000	.034067	.003000	....	....	
21, 500	86, 000	.038167	.003500	....	....	
22, 000	88, 000	.042333	.004166	....	....	
22, 500	90, 000	.047333	.005000	....	....	
23, 000	92, 000	.0533	.005967	....	....	
23, 500	94, 000	.0633	.0100	....	....	
24, 000	96, 000	.0733	.0100	....	....	
24, 500	98, 000	.0933	.0200	....	....	
24, 810	99, 240	.1300	.0367	....	....	**Tensile strength.**

General summary.

Tensile strength per square inch of original section	pounds..	99, 240
Elastic limit per square inch of original section	do...	47, 000
Elongation per inch after rupture	inch..	0. 2000
Elongation per inch under strain at elastic limit	do...	.001667
Reduction in diameter at point of rupture	do...	.104
Reduction in area after rupture, per centum of original section		33. 5
Position of rupture		⅛ inch from middle of stem
Character of broken surface		granular; dull spot near circumference
Elongation of inch sections		″.15, ″.32*, ″.13

No. 2188.

Marks, B L_2
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000533	.000200	.000033	.000033	
5, 000	20, 000	.000767	.000234	.000067	.000034	
6, 250	25, 000	.000900	.000133	.000067	0.	
7, 500	30, 000	.001067	.000167	.000067	0.	
8, 750	35, 000	.001233	.000166	.000067	0.	
10, 000	40, 000	.001467	.000234	.000100	.000033	
10, 250	41, 000	.001533	.000066	....	....	
10, 500	42, 000	.001567	.000034	....	....	
10, 750	43, 000	.001600	.000033	....	....	
11, 000	44, 000	.001667	.000067	....	....	
11, 250	45, 000	.001767	.000100	.000233	.000133	Elastic limit.
11, 500	46, 000	.001900	.000133	....	....	
11, 750	47, 000	.002067	.000167	....	....	
12, 000	48, 000	.002600	.000533	....	....	
12, 250	49, 000	.002900	.000300	....	....	
12, 500	50, 000	.003733	.000833	.001900	.001667	
12, 750	51, 000	.004167	.000434	....	....	
13, 000	52, 000	.004667	.000500	....	....	
13, 250	53, 000	.005267	.000600	....	....	
13, 500	54, 000	.006000	.000733	....	....	
13, 750	55, 000	.006700	.000700	....	....	
14, 000	56, 000	.007567	.000867	....	....	
14, 250	57, 000	.008067	.000500	....	....	
14, 500	58, 000	.009000	.000967	....	....	
14, 750	59, 000	.009900	.000900	....	....	
15, 000	60, 000	.010733	.000833	....	....	
15, 500	62, 000	.012233	.001500	....	....	
16, 000	64, 000	.013733	.001500	....	....	
16, 500	66, 000	.015333	.001600	....	....	
17, 000	68, 000	.017167	.001834	....	....	
17, 500	70, 000	.019033	.001866	....	....	
18, 000	72, 000	.021333	.002300	....	....	
18, 500	74, 000	.023333	.002000	....	....	
19, 000	76, 000	.025600	.002267	....	....	
19, 500	78, 000	.028000	.002400	....	....	
20, 000	80, 000	.030733	.002733	....	....	
20, 500	82, 000	.034167	.003434	....	....	
21, 000	84, 000	.037333	.003166	....	....	
21, 500	86, 000	.041333	.004000	....	....	
22, 000	88, 000	.045833	.004500	....	....	
22, 500	90, 000	.054833	.009000	....	....	
23, 000	92, 000	.0633	.008467	....	....	
23, 500	94, 000	.0700	.0067	....	....	
24, 000	96, 000	.0867	.0167	....	....	
24, 400	97, 600	.1267	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	97, 600
Elastic limit per square inch of original section	do...	45, 000
Elongation per inch after rupture	inch..	0. 1733
Elongation per inch under strain at elastic limit	do...	.001767
Reduction in diameter at point of rupture	do...	.094
Reduction in area after rupture, per centum of original section		30. 6
Position of rupture		".05 inch from middle of stem
Character of broken surface		granular; dull spot near circumference
Elongation of inch sections		".13, ".29*, ".10

No. 2189.

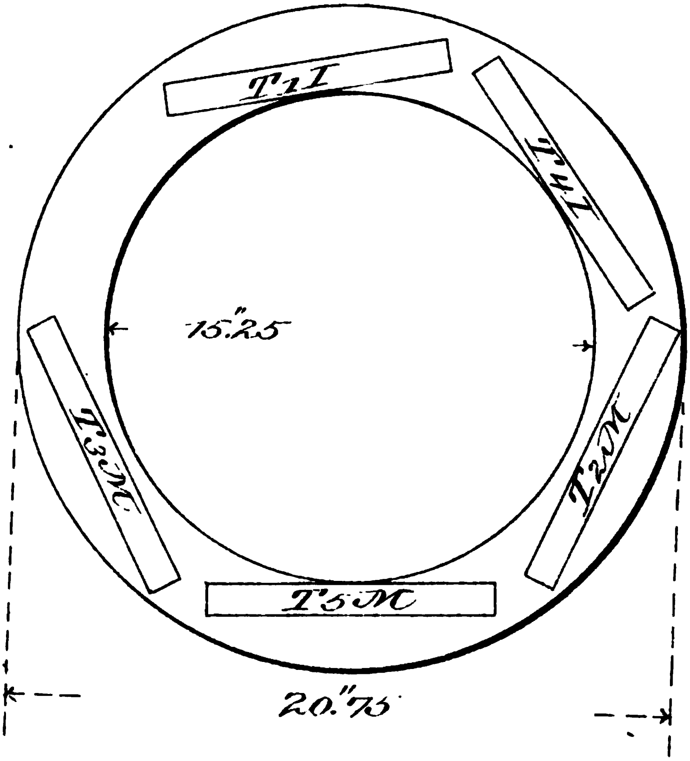
Marks, B L₃
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000967	.000167	0.	....	
8,750	35,000	.001167	.000200	0.	....	
10,000	40,000	.001400	.000233	.000100	.000100	
10,250	41,000	.001467	.000067	....	....	
10,500	42,000	.001500	.000033	....	....	
10,750	43,000	.001567	.000067	....	....	
11,000	44,000	.001633	.000066	....	....	
11,250	45,000	.001700	.000067	.000200	.000100	
11,500	46,000	.001767	.000067	....	....	
11,750	47,000	.001833	.000066	....	....	
12,000	48,060	.001933	.001000	....	....	
12,250	49,000	.002000	.000067	....	....	
12,500	50,000	.002133	.000133	.000433	.000233	Elastic limit not well defined.
12,750	51,000	.002233	.000100	....	....	
13,000	52,000	.002367	.000134	....	....	
13,250	53,000	.002533	.000166	....	....	
13,500	54,000	.002767	.000234	....	....	
13,750	55,000	.003167	.000400	....	....	
14,000	56,000	.003533	.000366	....	....	
14,250	57,000	.004067	.000534	....	....	
14,500	58,000	.004700	.000633	....	....	
14,750	59,000	.005267	.000567	....	....	
15,000	60,000	.006000	.000733	....	....	
15,500	62,000	.007667	.001667	....	....	
16,000	64,000	.009200	.001533	....	....	
16,500	66,000	.010833	.001633	....	....	
17,000	68,000	.012400	.001567	....	....	
17,500	70,000	.014333	.001933	....	....	
18,000	72,000	.016200	.001867	....	....	
18,500	74,000	.018000	.001800	....	....	
19,000	76,000	.020000	.002000	....	....	
19,500	78,000	.022167	.002167	....	....	
20,000	80,000	.024533	.002366	....	....	
20,500	82,000	.027433	.002900	....	....	
21,000	84,000	.030000	.002567	....	....	
21,500	86,000	.034667	.004667	....	....	
22,000	88,000	.037667	.003000	....	....	
22,500	90,000	.042333	.004666	....	....	
23,000	92,000	.047333	.005000	....	....	
23,500	94,000	.053333	.006000	....	....	
24,000	96,000	.0667	.013367	....	....	
24,500	98,000	.0767	.0100	....	....	
25,000	100,000	.1067	.0300	....	....	
25,010	100,040	.1333	.0266	....	....	Tensile strength.

General summory.

Tensile strength per square inch of original section	pounds..	100,040
Elastic limit per square inch of original section, not well defined	do...	50,000
Elongation per inch after rupture	inch..	0.1700
Elongation per inch under strain at elastic limit	do...	.002133
Reduction in diameter at point of rupture	do...	.094
Reduction in area after rupture, per centum of original section		30.6
Position of rupture		″.30 from middle of stem
Character of broken surface		granular; dull eccentric spot
Elongation of inch sections		″.14, ″.25*, ″.12

8" Experimental Hoop



H Ex 3/ 49 2

No. 2322.

Marks, $^{8\ \mathrm{Hex}}_{\mathrm{T,\ I}}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000167	.000167	0.	....	
2, 500	10, 000	.000333	.000166	0.	....	
3, 750	15, 000	.000483	.000150	0.	....	
5, 000	20, 000	.000667	.000184	0.	....	
6, 250	25, 000	.000783	.000116	0.	....	
7, 500	30, 000	.000933	.000150	0.	....	
8, 750	35, 000	.001117	.000184	0.	....	
10, 000	40, 000	.001283	.000166	0.	....	
11, 250	45, 000	.001400	.000117	0.	....	
12, 500	50, 000	.001583	.000183	0.	....	
12, 750	51, 000	.001617	.000034	....	....	
13, 000	52, 000	.001650	.000033	....	....	
13, 250	53, 000	.001683	.000033	....	....	
13, 500	54, 000	.001700	.000017	....	....	
13, 750	55, 000	.001733	.000033	0.	....	
14, 000	56, 000	.001767	.000034	....	....	
14, 250	57, 000	.001800	.000033	....	....	
14, 500	58, 000	.001867	.000067	....	....	
14, 750	59, 000	.002033	.000166	....	....	
15, 000	60, 000	.002067	.000034	.000067	.000067	Elastic limit.
15, 250	61, 000	.002183	.000116	....	....	
15, 500	62, 000	.002350	.000167	....	....	
15, 750	63, 000	.002533	.000183	....	....	
16, 000	64, 000	.002767	.000234	....	....	
16, 250	65, 000	.003100	.000333	....	....	
16, 500	66, 000	.003600	.000500	....	....	
16, 750	67, 000	.004183	.000583	....	....	
17, 000	68, 000	.004883	.000700	....	....	
17, 250	69, 000	.005517	.000634	....	....	
17, 500	70, 000	.006500	.000983	....	....	
18, 000	72, 000	.008167	.001667	....	....	
18, 500	74, 000	.009833	.001666	....	....	
19, 000	76, 000	.011383	.001550	....	....	
19, 500	78, 000	.013017	.001634	....	....	
20, 000	80, 000	.014667	.001650	....	....	
20, 500	82, 000	.016500	.001833	....	....	
21, 000	84, 000	.018333	.001833	....	....	
21, 500	86, 000	.020167	.001834	....	....	
22, 000	88, 000	.022167	.002000	....	....	
22, 500	90, 000	.024333	.002166	....	....	
23, 000	92, 000	.0267	.002367	....	....	
23, 500	94, 000	.0283	.0016	....	....	
24, 000	96, 000	.0317	.0034	....	....	
24, 500	98, 000	.0350	.0033	....	....	
25, 000	100, 000	.0383	.0033	....	....	
25, 500	102, 000	.0417	.0034	....	....	
26, 000	104, 000	.0467	.0050	....	....	
26, 500	106, 000	.0517	.0050	....	....	
27, 000	108, 000	.0617	.0100	....	....	
27, 500	110, 000	.0817	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section ....pounds.. 110, 000
Elastic limit per square inch of original section ....do... 60, 000
Elongation per inch after rupture ....inch.. 0. 0967
Elongation per inch under strain at elastic limit ....do... .002067
Reduction in diameter at point of rupture ....do... .095
Reduction in area after rupture, per centum of original section 30. 6
Position of rupture .... ″.35 from neck
Character of broken surface ....granular; dull center
Elongations of inch sections ....″.20*, ″.08, ″.08, ″.07, ″.07, ″.08

No. 2323.

Marks, $^{8\ \mathrm{Hex}}_{\mathrm{T_2\ M}}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	**Initial load.**
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000317	.000184	0.	....	
3,750	15,000	.000467	.000150	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000767	.000134	0.	....	
7,500	30,000	.000967	.000200	0.	....	
8,750	35,000	.001133	.000166	0.	....	
10,000	40,000	.001267	.000134	0.	....	
11,250	45,000	.001450	.000183	0.	....	
12,500	50,000	.001633	.000183	0.	....	
12,750	51,000	.001650	.000017	....	....	
13,000	52,000	.001683	.000033	....	....	
13,250	53,000	.001717	.000034	....	....	
13,500	54,000	.001750	.000033	....	....	
13,750	55,000	.001800	.000050	....	....	**Elastic limit.**
14,000	56,000	.001883	.000083	....	....	
14,250	57,000	.002000	.000117	....	....	
14,500	58,000	.002167	.000167	....	....	
14,750	59,000	.002400	.000233	....	....	
15,000	60,000	.002717	.000317	....	....	
15,500	62,000	.003833	.001116	....	....	
16,000	64,000	.005083	.001250	....	....	
16,500	66,000	.006667	.001584	....	....	
17,000	68,000	.008333	.001666	....	....	
17,500	70,000	.009833	.001500	....	....	
18,000	72,000	.011333	.001500	....	....	
18,500	74,000	.013017	.001684	....	....	
19,000	76,000	.014850	.001833	....	....	
19,500	78,000	.016800	.001950	....	....	
20,000	80,000	.018583	.001783	....	....	
20,500	82,000	.020200	.001617	....	....	
21,000	84,000	.022250	.002050	....	....	
21,500	86,000	.024333	.002083	....	....	
22,000	88,000	.026667	.002334	....	....	
22,500	90,000	.029000	.002333	....	....	
23,000	92,000	....	....	....	....	**Tensile strength.**

General summary.

Tensile strength per square inch of original section	pounds..	92,000
Elastic limit per square inch of original section	do...	55,000
Elongation per inch after rupture	inch..	0.0233
Elongation per inch under strain at elastic limit	do...	.001800
Reduction in diameter at point of rupture	do...	.024
Reduction in area after rupture, per centum of original section		8.4
Position of rupture		¼ inch from middle of stem
Character of broken surface		granular, radiating from a point in the circumference
Elongation of inch sections		″.02, ″.03, ″.03*, ″.02, ″.02, ″.02

No. 2324.

Marks, $^{8\ \mathrm{Hex}}_{\mathrm{T_3\ M}}$.
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000083	.000083	0.	....	
2, 500	10, 000	.000267	.000184	0.	....	
3, 750	15, 000	.000400	.000133	0.	....	
5, 000	20, 000	.000567	.000167	0.	....	
6, 250	25, 000	.000717	.000150	0.	....	
7, 500	30, 000	.000900	.000183	0.	....	
8, 750	35, 000	.001067	.000167	0.	....	
10, 000	40, 000	.001233	.000166	0.	....	
11, 250	45, 000	.001400	.000167	0.	....	
12, 500	50, 000	.001583	.000183	0.	....	
12, 750	51, 000	.001617	.000034	....	....	
13, 000	52, 000	.001650	.000033	....	....	
13, 250	53, 000	.001683	.000033	....	....	
13, 500	54, 000	.001800	.000117	....	....	
13, 750	55, 000	.001833	.000033	.000017	.000017	
14, 000	56, 000	.001867	.000034	....	....	
14, 250	57, 000	.001917	.000050	....	....	Elastic limit.
14, 500	58, 000	.002050	.000133	....	....	
14, 750	59, 000	.002167	.000117	....	....	
15, 000	60, 000	.002500	.000333	....	....	
15, 500	62, 000	.003467	.000967	....	....	
16, 000	64, 000	.005333	.001866	....	....	
16, 500	66, 000	.007333	.002000	....	....	
17, 000	68, 000	.009000	.001667	....	....	
17, 500	70, 000	.010850	.001850	....	....	
18, 000	72, 000	.012517	.001667	....	....	
18, 500	74, 000	.014333	.001816	....	....	
19, 000	76, 000	.016167	.001834	....	....	
19, 500	78, 000	.018000	.001833	....	....	
20, 000	80, 000	.020133	.002133	....	....	
20, 500	82, 000	.022250	.002117	....	....	
21, 000	84, 000	.0233	.001050	....	....	
21, 500	86, 000	.0267	.0034	....	....	
22, 000	88, 000	.0300	.0033	....	....	
22, 500	90, 000	.0333	.0033	....	....	
23, 000	92, 000	.0350	.0017	....	....	
23, 500	94, 000	.0400	.0050	....	....	
24, 000	96, 000	.0450	.0050	....	....	
24, 500	98, 000	.0517	.0067	....	....	
25, 000	100, 000	.0600	.0083	....	....	
25, 500	102, 000	.0750	.0150	....	....	
25, 990	103, 960	.1167	.0417	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section........................pounds..	103, 960
Elastic limit per square inch of original section ....do...	57, 000
Elongation per inch after rupture..... ....inch..	0. 1633
Elongation per inch under strain at elastic limit ....do...	.001917
Reduction in diameter at point of rupture.....................................do...	.144
Reduction in area after rupture, per centum of original section	44. 6
Position of rupture	½ inch from middle of stem
Character of broken surface............................	granular at circumference; dull center
Elongation of inch sections..	″.08, ″.12, ″.36*, ″.15, ″.15, ″.12

No. 2540.

Marks, $^{8\,\mathrm{Hex}}_{\mathrm{T}_4\,\mathrm{I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000117	.000117	0.	....	
2, 500	10, 000	.000250	.000133	0.	....	
3, 750	15, 000	.000433	.000183	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000717	.000117	0.	....	
7, 500	30, 000	.000883	.000166	0.	....	
8, 750	35, 000	.001083	.000200	....	....	
10, 000	40, 000	.001233	.000150	....	....	
11, 250	45, 000	.001417	.000184	....	....	
12, 500	50, 000	.001600	.000183	....	....	
12, 750	51, 000	.001633	.000033	....	....	
13, 000	52, 000	.001667	.000034	....	....	
13, 250	53, 000	.001700	.000033	....	....	
13, 500	54, 000	.001750	.000050	....	....	
13, 750	55, 000	.001783	.000033	....	....	
14, 000	56, 000	.001817	.000034	....	....	
14, 250	57, 000	.001867	.000050	....	....	
14, 500	58, 000	.001950	.000083	....	....	
14, 750	59, 000	.002000	.000050	....	....	Elastic limit.
15, 000	60, 000	.002167	.000167	....	....	
15, 250	61, 000	.002283	.000116	....	....	
15, 500	62, 000	.002567	.000284	....	....	
16, 000	64, 000	.003100	.000533	....	....	
16, 500	66, 000	.003700	.000600	....	....	
17, 000	68, 000	.005167	.001467	....	....	
17, 500	70, 000	.006417	.001250	....	....	
18, 000	72, 000	.007833	.001416	....	....	
18, 500	74, 000	.009333	.001500	....	....	
19, 000	76, 000	.011000	.001667	....	....	
19, 500	78, 000	.012517	.001517	....	....	
20, 000	80, 000	.014167	.001650	....	....	
20, 500	82, 000	.015667	.001500	....	....	
21, 000	84, 000	.017500	.001833	....	....	
21, 500	86, 000	.019333	.001833	....	....	
22, 000	88, 000	.021417	.002084	....	....	
22, 500	90, 000	.0233	.001883	....	....	
23, 000	92, 000	.0250	.0017	....	....	
23, 500	94, 000	.0283	.0033	....	....	
24, 000	96, 000	.0317	.0034	....	....	
24, 500	98, 000	.0350	.0033	....	....	
25, 000	100, 000	.0367	.0017	....	....	
25, 500	102, 000	.0383	.0016	....	....	
26, 000	104, 000	.0450	.0067	....	....	
26, 500	106, 000	.0500	.0050	....	....	
27, 000	108, 000	.0567	.0067	....	....	
27, 500	110, 000	.0700	.0133	....	....	
27, 550	110, 200	.0800	.0100	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..................................pounds..	110, 200
Elastic limit per square inch of original section..................................do...	59, 000
Elongation per inch after rupture..................................inch .	0. 0867
Elongation per inch under strain at elastic limit..................................do...	.002000
Reduction in diameter at point of rupture..................................do...	.094
Reduction in area after rupture, per centum of original section..................................	30. 6
Position of rupture..................................	″.40 from neck
Character of broken surface..................................	granular; dull center
Elongation of inch sections..................................	″.25*, ″.06, ″.06, ″.04, ″.05, ″.06

No. 2541.

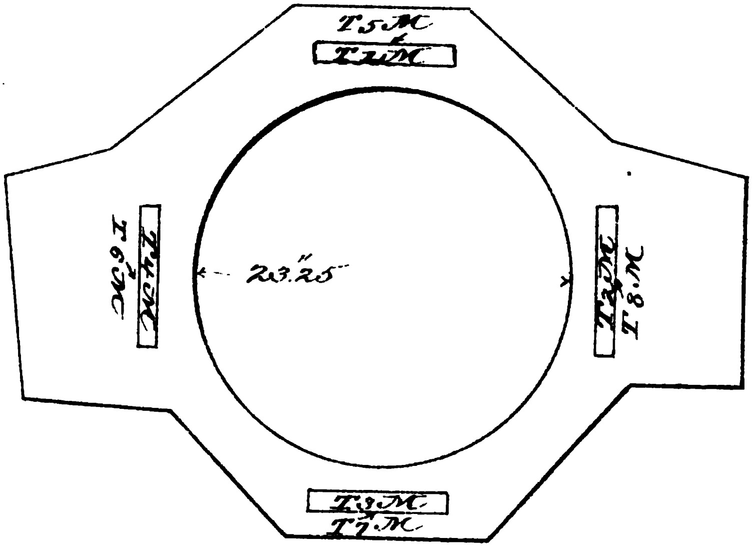
Marks, $^{\text{8 Hex}}_{\text{T}_5\text{ M}}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000150	.000150	0.	....	
2, 500	10, 000	.000317	.000167	0.	....	
3, 750	15, 000	.000483	.000166	0.	....	
5, 000	20, 000	.000650	.000167	0.	....	
6, 250	25, 000	.000833	.000183	0.	....	
7, 500	30, 000	.000983	.000150	0.	....	
8, 750	35, 000	.001133	.000150	....	....	
10, 000	40, 000	.001300	.000167	....	....	
11, 250	45, 000	.001467	.000167	....	....	
12, 500	50, 000	.001633	.000166	....	....	
12, 750	51, 000	.001667	.000034	....	....	
13, 000	52, 000	.001717	.000050	....	....	
13, 250	53, 000	.001767	.000050	....	....	Elastic limit.
13, 500	54, 000	.001850	.000083	....	....	
13, 750	55, 000	.001967	.000117	....	....	
14, 000	56, 000	.002117	.000150	....	....	
14, 250	57, 000	.002367	.000250	....	....	
14, 500	58, 000	.002717	.000350	....	....	
14, 750	59, 000	.003117	.000400	....	....	
15, 000	60, 000	.003700	.000583	....	....	
15, 500	62, 000	.004917	.001217	....	....	
16, 000	64, 000	.006583	.001666	....	....	
16, 500	66, 000	.008233	.001650	....	....	
17, 000	68, 000	.009717	.001484	....	....	
17, 500	70, 000	.011200	.001483	....	....	
18, 000	72, 000	.012767	.001567	....	....	
18, 500	74, 000	.014667	.001900	....	....	
19, 000	76, 000	.016183	.001516	....	....	
19, 500	78, 000	.017900	.001717	....	....	
20, 000	80, 000	.019867	.001967	....	....	
20, 500	82, 000	.022250	.002383	....	....	
21, 000	84, 000	.024333	.002083	....	....	
21, 500	86, 000	.027000	.002667	....	....	
22, 000	88, 000	.029000	.002000	....	....	
22, 500	90, 000	.0333	.0043	....	....	
23, 000	92, 000	.0350	.0017	....	....	
23, 500	94, 000	.0400	.0050	....	....	
24, 000	96, 000	.0433	.0033	....	....	
24, 500	98, 000	.0483	.0050	....	....	
25, 000	100, 000	.0533	.0050	....	....	
25, 500	102, 000	.0650	.0117	....	....	
26, 000	104, 000	.0783	.0133	....	....	
26, 060	104, 240	.0900	.0117	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	104, 240
Elastic limit per square inch of original section	do...	53, 000
Elongation per inch after rupture	inch..	0. 1133
Elongation per inch under strain at elastic limit	do...	.001767
Reduction in diameter at point of rupture	do...	.114
Reduction in area after rupture, per centum of original section		36. 4
Position of rupture		1 inch from neck
Character of broken surface		granular ; dull center
Elongation of inch sections		".27*, ".13, ".10, ".05, ".06, ".07

8" experimental Trunnion Hoop.



No. 2046.

Marks, $^{8\,T\,Hex}_{T_1\,M}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000117	.000117	0.	....	
2,500	10,000	.000283	.000166	0.	....	
3,750	15,000	.000450	.000167	0.	....	
5,000	20,000	.000617	.000167	0.	....	
6,250	25,000	.000783	.000166	0.	....	
7,500	30,000	.000933	.000150	0.	....	
8,750	35,000	.001083	.000150	0.	....	
10,000	40,000	.001250	.000167	0.	....	
11,250	45,000	.001433	.000183	0.	....	
11,500	46,000	.001467	.000034	....	....	
11,750	47,000	.001500	.000033	....	....	
12,000	48,000	.001533	.000033	....	....	
12,250	49,000	.001567	.000034	....	....	
12,500	50,000	.001617 .003950	.000050 .002333	.002217	.002217	Elastic limit.
12,750	51,000	.005167	.001217	....	....	
13,000	52,000	.007917	.002750	....	....	
13,250	53,000	.009000	.001083	....	....	
13,500	54,000	.010167	.001167	....	....	
13,750	55,000	.011500	.001333	....	....	
14,000	56,000	.012017	.000517	....	....	
14,250	57,000	.012567	.000550	....	....	
14,500	58,000	.013533	.000966	....	....	
14,750	59,000	.014350	.000817	....	....	
15,000	60,000	.015517	.001167	....	....	
15,500	62,000	.017500	.001983	....	....	
16,000	64,000	.019667	.002167	....	....	
16,500	66,000	.021917	.002250	....	....	
17,000	68,000	.024500	.002583	....	....	
17,500	70,000	.027167	.002667	....	....	
18,000	72,000	.030167	.003000	....	....	
18,500	74,000	.0333	.003133	....	....	
19,000	76,000	.0367	.0034	....	....	
19,500	78,000	.0433	.0066	....	....	
20,000	80,000	.0467	.0034	....	....	
20,500	82,000	.0517	.0050	....	....	
21,000	84,000	.0600	.0083	....	....	
21,500	86,000	.0700	.0100	....	....	
22,000	88,000	.0850	.0150	....	....	
22,500	90,000	.1133	.0283	....	....	
22,610	90,440	.1517	.0384	....	....	Tensile strength.

General summary.

Specific gravity		7.8501
Hardness		16.56
Tensile strength per square inch of original section	pounds..	90,440
Elastic limit per square inch of original section	do...	50,000
Elongation per inch after rupture	inch..	0.1917
Elongation per inch under strain at elastic limit	do...	.001617
Reduction in diameter at point of rupture	do...	.165
Reduction in area after rupture, per centum of original section		49.7
Position of rupture		″.95 from neck
Character of broken surface		silky, interspersed with fine granulation
Elongation of inch sections		″.39*, ″.19, ″.14, ″.15, ″.15, ″.13

No. 2329.

Marks, $^{8}\genfrac{}{}{0pt}{}{\text{T Hex}}{\text{T, M}}$

Diameter, ″.564.

Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	0.	....	
10,000	40,000	.001267	.000167	0.	....	
11,250	45,000	.001400	.000133	0.	....	
11,500	46,000	.001433	.000033	....	....	
11,750	47,000	.001467	.000034	....	....	
12,000	48,000	.001517	.000050	....	....	
12,250	49,000	.001567	.000050	....	....	
12,500	50,000	.001633	.000066	.000033	.000033	
12,750	51,000	.001667	.000034	....	....	
13,000	52,000	.001700	.000033	....	....	
13,250	53,000	.001733	.000033	....	....	
13,500	54,000	.001783	.000050	....	....	
13,750	55,000	.001817	.000034	....	....	Elastic limit.
14,000	56,000	.003250	.001433	....	....	
14,250	57,000	.007667	.004417	....	....	
14,500	58,000	.008667	.001000	....	....	
14,750	59,000	.009333	.000666	....	....	
15,000	60,000	.010083	.000750	....	....	
15,500	62,000	.011667	.001584	....	....	
16,000	64,000	.013583	.001916	....	....	
16,500	66,000	.015683	.002100	....	....	
17,000	68,000	.017750	.002067	....	....	
17,500	70,000	.019833	.002083	....	....	
18,000	72,000	.022167	.002334	....	....	
18,500	74,000	.024867	.002700	....	....	
19,000	76,000	.027667	.002800	....	....	
19,500	78,000	.030667	.003000	....	....	
20,000	80,000	.0350	.004333	....	....	
20,500	82,000	.0383	.0033	....	....	
21,000	84,000	.0433	.0050	....	....	
21,500	86,000	.0500	.0067	....	....	
22,000	88,000	.0567	.0067	....	....	
22,500	90,000	.0667	.0100	....	....	
23,000	92,000	.0867	.0200	....	....	
23,400	93,600	.1333	.0466	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................................pounds.. 93,600
Elastic limit per square inch of original section..do... 55,000
Elongation per inch after rupture...inch.. 0.1761
Elongation per inch under strain at elastic limit...do... .001817
Reduction in diameter at point of rupture..do... .114
Reduction in area after rupture, per centum of original section................................ 36.4
Position of rupture...″.35 from middle of stem
Character of broken surface..............................granular, 60 per centum; silky, 40 per centum
Elongation of inch sections...″.12, ″.16, ″.35*, ″.18, ″.14, ″.1.

No. 2330.

Marks, $^{\text{S T Hex}}_{\text{T}_2\text{ M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000367	.000234	0.	....	
3, 750	15, 000	.000517	.000150	0.	....	
5, 000	20, 000	.000667	.000150	0.	....	
6, 250	25, 000	.000850	.000183	0.	....	
7, 500	30, 000	.001017	.000167	0.	....	
8, 750	35, 000	.001183	.000166	0.	....	
10, 000	40, 000	.001350	.000167	0.	....	
11, 250	45, 000	.001500	.000150	0.	....	
11, 500	46, 000	.001533	.000033	....	....	
11, 750	47, 000	.001567	.000034	....	....	
12, 000	48, 000	.001583	.000016	....	....	
12, 250	49. 000	.001617	.000034	....	....	
12, 500	50, 000	.001667	.000050	....	....	
12, 750	51, 000	.001700	.000033	....	....	
13, 000	52, 000	.001717	.000017	....	....	
13, 250	53, 000	.001750	.000033	....	....	
13, 500	54, 000	.001800	.000050	....	....	Elastic limit.
13, 750	55, 000	.002233	.000433	....	....	
14, 000	56, 000	.014017	.011784	....	....	
14, 250	57, 000	.014250	.000233	....	....	
14, 500	58, 000	.014833	.000583	....	....	
14, 750	59, 000	.015750	.000917	....	....	
15, 000	60, 000	.016750	.001000	....	....	
15, 500	62, 000	.018917	.002167	....	....	
16, 000	64, 000	.021333	.002416	....	....	
16, 500	66, 000	.023833	.002500	....	....	
17, 000	68, 000	.026500	.002667	....	....	
17, 500	70, 000	.029417	.002917	....	....	
18, 000	72, 000	.0317	.002283	....	....	
18, 500	74, 000	.0350	.0033	....	....	
19, 000	76, 000	.0383	.0033	....	....	
19, 500	78, 000	.0450	.0067	....	....	
20, 000	80, 000	.0500	.0050	....	....	
20, 500	82, 000	.0600	.0100	....	....	
21, 000	84, 000	.0667	.0067	....	....	
21, 500	86, 000	.0800	.0133	....	....	
22, 000	88, 000	.1000	.0200	....	....	
22, 400	89, 600	.1600	.0600	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	89, 600
Elastic limit per square inch of original section	do	54, 000
Elongation per inch after rupture	inch	0. 2217
Elongation per inch under strain at elastic limit	do	.001800
Reduction in diameter at point of rupture	do	.184
Reduction in area after rupture, per centum of original section		54. 6
Position of rupture		1 inch from middle of stem
Character of broken surface		fine silky
Elongation of inch sections		″.15, ″.24, ″.42*, ″.17, ″.18, ″.17

No. 2331.

Marks, $^{8}\,{}^{\text{T Hex}}_{\text{T}_4\text{ M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000183	.000183	0.	....	
2, 500	10, 000	.000333	.000150	0.	....	
3, 750	15, 000	.000500	.000167	0.	....	
5, 000	20, 000	.000667	.000167	0.	....	
6, 250	25, 000	.000833	.000166	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
8, 750	35, 000	.001167	.000167	0.	....	
10, 000	40, 000	.001350	.000183	0.	....	
11, 250	45, 000	.001500	.000151	0.	....	
12, 500	50, 000	.001667	.000167	0.	....	
12, 750	51, 000	.001700	.000033	....	....	
13, 000	52, 000	.001733	.000033	....	....	
13, 250	53, 000	.001783	.000050	....	....	
13, 500	54, 000	.001833	.000050	....	....	
13, 750	55, 000	.001867	.000034	....	....	
14, 000	56, 000	.001917	.000050	....	....	
14, 250	57, 000	.001950	.000033	....	....	Elastic limit.
14, 500	58, 000	.008833	.006883	....	....	
14, 750	59, 000	.009200	.000367	....	....	
15, 000	60, 000	.010017	.000817	....	....	
15, 500	62, 000	.011750	.001733	....	....	
16, 000	64, 000	.014000	.002250	....	....	
16, 500	66, 000	.015750	.001750	....	....	
17, 000	68, 000	.018333	.002583	....	....	
17, 500	70, 000	.020000	.001667	....	....	
18, 000	72, 000	.022333	.002333	....	....	
18, 500	74, 000	.025000	.002667	....	....	
19, 000	76, 000	.027667	.002667	....	....	
19, 500	78, 000	.030833	.003166	....	....	
20, 000	80, 000	.034167	.003334	....	....	
20, 500	82, 000	.0367	.002533	....	....	
21, 000	84, 000	.0417	.0050	....	....	
21, 500	86, 000	.0500	.0083	....	....	
22, 000	88, 000	.0550	.0050	....	....	
22, 500	90, 000	.0667	.0117	....	....	
23, 000	92, 000	.0833	.0166	....	....	
23, 480	93, 920	.1350	.0517	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..................................pounds.. 93, 920
Elastic limit per square inch of original section..do... 57, 000
Elongation per inch after rupture ....inch.. 0. 1800
Elongation per inch under strain at elastic limit ....do... .001950
Reduction in diameter at point of rupture ....do... .164
Reduction in area after rupture, per centum of original section 49. 7
Position of rupture...at middle of stem
Character of broken surface... ...silky; traces of granulation
Elongation of inch sections ....″.12, ″.13, ″.24, ″.32*, ″.15, ″.13

No. 2325.

Marks, ${}^{8\text{ T Hex}}_{\text{T}_1\text{ M}}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000117	.000117	0.	....	
2, 500	10, 000	.000317	.000200	0.	....	
3, 750	15, 000	.000467	.000150	0.	....	
5, 000	20, 000	.000650	.000183	0.	....	
6, 250	25, 000	.000783	.000133	0.	....	
7, 500	30, 000	.000983	.000200	0.	....	
8, 750	35, 000	.001133	.000150	0.	....	
10, 000	40, 000	.001333	.000200	0.	....	
11, 250	45, 000	.001533	.000200	....	....	
11, 500	46, 000	.001583	.000050	....	....	Elastic limit.
11, 750	47, 000	.011833	.010250	....	....	
12, 000	48, 000	.012333	.000500	....	....	
12, 250	49, 000	.012767	.000434	....	....	
12, 500	50, 000	.013417	.000650	....	....	
12, 750	51, 000	.014000	.000583	....	....	
13, 000	52, 000	.014850	.000850	....	....	
13, 250	53, 000	.015683	.000833	....	....	
13, 500	54, 000	.016933	.001250	....	....	
13, 750	55, 000	.017833	.000900	....	....	
14, 000	56, 000	.018967*	.001134	....	....	
14, 250	57, 000	.019750	.000783	....	....	
14, 500	58, 000	.021000	.001250	....	....	
14, 750	59, 000	.021867	.000867	....	....	
15, 000	60, 000	.022917	.001050	....	....	
15, 500	62, 000	.025500	.002583	....	....	
16, 000	64, 000	.027917	.002417	....	....	
16, 500	66, 000	.0300	.002083	....	....	
17, 000	68, 000	.0333	.0033	....	....	
17, 500	70, 000	.0367	.0034	....	....	
18, 000	72, 000	.0417	.0050	....	....	
18, 500	74, 000	.0467	.0050	....	....	
19, 000	76, 000	.0517	.0050	....	....	
19, 500	78, 000	.0567	.0050	....	....	
20, 000	80, 000	.0650	.0083	....	....	
20, 500	82, 000	.0767	.0117	....	....	
21, 000	84, 000	.0900	.0133	....	....	
21, 500	86, 000	.1150	.0250	....	....	
21, 750	87, 000	.1550	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	87, 000
Elastic limit per square inch of original section	do...	46, 000
Elongation per inch after rupture	inch..	0. 2033
Elongation per inch under strain at elastic limit	do...	.001583
Reduction in diameter at point of rupture	do...	.175
Reduction in area after rupture, per centum of original section		52. 2
Position of rupture		at middle of stem
Character of broken surface		fine silky
Elongation of inch sections		″.12, ″.16, ″.30, ″.37*, ″.15, ″.12

No. 2326.

Marks, $^{8\text{ T Hex}}_{\text{T. M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	— .000033	.000033	
2,500	10,000	.000250	.000150	— .000033	0.	
3,750	15,000	.000400	.000150	— .000033	0.	
5,000	20,000	.000567	.000167	— .000033	0.	
6,250	25,000	.000733	.000166	— .000033	0.	
7,500	30,000	.000900	.000167	— .000033	0.	
8,750	35,000	.001067	.000167	— .000033	0.	
10,000	40,000	.001250	.000183	— .000033	0.	
11,250	45,000	.001400	.000150	— .000033	0.	
11,500	46,000	.001417	.000017			
11,750	47,000	.001467	.000050			Elastic limit.
12,000	48,000	.001567	.000100			
12,250	49,000	.004233	.002666			
12,500	50,000	.006167	.001934			
12,750	51,000	.008033	.001916			
13,000	52,000	.009183	.001100			
13,250	53,000	.010083	.000900			
13,500	54,000	.011167	.001084			
13,750	55,000	.012000	.000833			
14,000	56,000	.013000	.001000			
14,250	57,000	.013767	.000767			
14,500	58,000	.014750	.000983			
14,750	59,000	.015750	.001000			
15,000	60,000	.016917	.001167			
15,500	62,000	.019100	.002183			
16,000	64,000	.021267	.002167			
16,500	66,000	.023750	.002483			
17,000	68,000	.026333	.002583			
17,500	70,000	.029167	.002834			
18,000	72,000	.032250	.003083			
18,500	74,000	.0367	.004450			
19,000	76,000	.0400	.0033			
19,500	78,000	.0450	.0050			
20,000	80,000	.0500	.0050			
20,500	82,000	.0567	.0067			
21,000	84,000	.0667	.0100			
21,500	86,000	.0817	.0150			
22,000	88,000	.1067	.0250			
22,250	89,000	.1467	.0400			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	89,000
Elastic limit per square inch of original section	do...	47,000
Elongation per inch after rupture	inch..	0.1750
Elongation per inch under strain at elastic limit	do...	.001467
Reduction in diameter at point of rupture	do...	.114
Reduction in area after rupture, per centum of original section		36.4
Position of rupture		″.75 from neck
Character of broken surface		granular, 50 per centum; silky, 50 per centum
Elongation of inch sections		″.17, ″.14, ″.14, ″.12, ″.16, ″.32

No. 2327.

Marks, $^{\text{8 T Hex}}_{\text{T, M}}$
Diameter, ″.565.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000133	0.	....	
2,500	10,000	.000317	.000184	0.	....	
3,750	15,000	.000467	.000150	0.	....	
5,000	20,000	.000650	.000183	0.	....	
6,250	25,000	.000817	.000167	0.	....	
7,500	30,000	000983	.000166	0.	....	
8,750	35,000	.001150	.000167	0.	....	
10,000	40,000	.001317	.000167	0.	....	
10,250	41,000	.001350	.000033	....	....	
10,500	42,000	.001400	.000050	....	....	
10,750	43,000	.001433	.000033	....	....	Elastic limit.
11,000	44,000	.001567	.000134	....	....	
11,250	45,000	.009667	.008100	....	....	
11,500	46,000	.010500	.000833	....	....	
11,750	47,000	.011033	.000533	....	....	
12,000	48,000	.011867	.000834	....	....	
12,250	49,000	.012517	.000650	....	....	
12,500	50,000	.013333	.000816	....	....	
13,000	52,000	.015250	.001917	....	....	
13,500	54,000	.017167	.001917	....	....	
14,000	56,000	.019167	.002000	....	....	
14,500	58,000	.021083	.001916	....	....	
15,000	60,000	.023300	.002217	....	....	
15,500	62,000	.025333	.002033	....	....	
16,000	64,000	.027833	.002500	....	....	
16,500	66,000	.030533	.002700	....	....	
17,000	68,000	.0333	.002767	....	....	
17,500	70,000	.0367	.0034	....	....	
18,000	72,000	.0400	.0033	....	....	
18,500	74,000	.0450	.0050	....	....	
19,000	76,000	.0500	.0050	....	....	
19,500	78,000	.0550	.0050	....	....	
20,000	80,000	.0633	.0083	....	....	
20,500	82,000	.0733	.0100	....	....	
21,000	84,000	.0867	.0134	....	....	
21,500	86,000	.1083	.0216	....	....	
21,850	87,400	.1600	.0517	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	87,400
Elastic limit per square inch of original section	do	43,003
Elongation per inch after rupture	inch	0.1983
Elongation per inch under strain at elastic limit	do	.001435
Reduction in diameter at point of rupture	do	.152
Reduction in area after rupture, per centum of original section		47.
Position of rupture		1½ inches from middle of stem
Character of broken surface		silky
Elongation of inch sections		″.11, ″.14, ″.16, ″.22, ″.42*, ″.14

No. 2328.

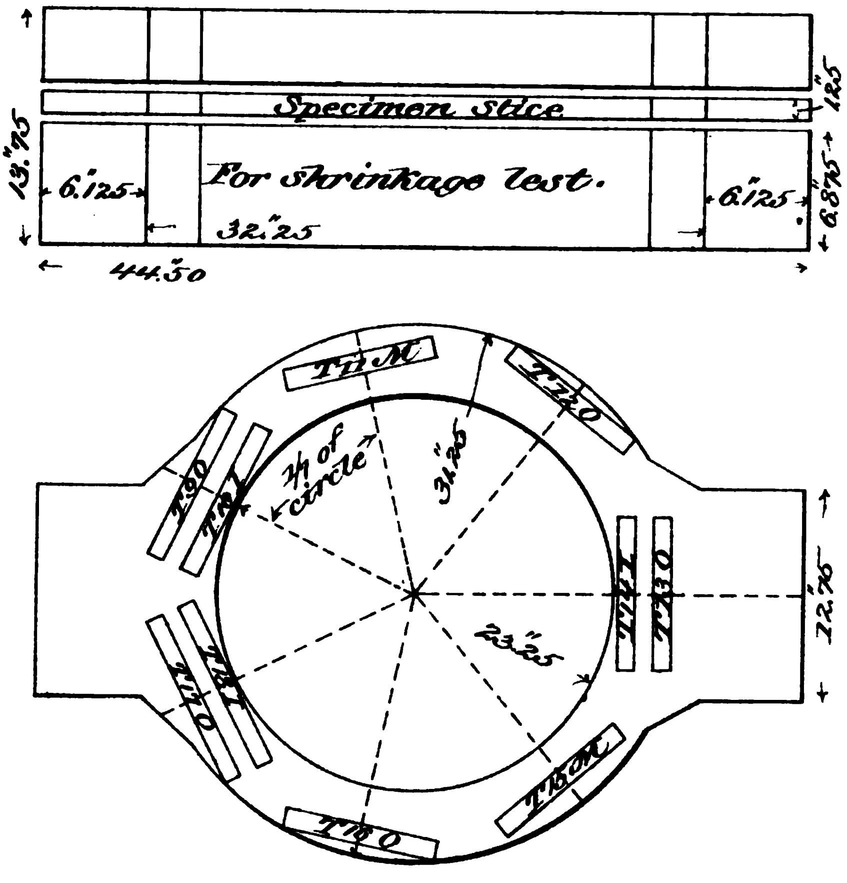
Marks, $^{8\ \mathrm{T\ Hex}}_{\quad\mathrm{T_s\ M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000283	.000183	0.	....	
3,750	15,000	.000450	.000167	0.	....	
5,000	20,000	.000617	.000167	0.	....	
6,250	25,000	.000783	.000166	0.	....	
7,500	30,000	.000950	.000167	0.	....	
8,750	35,000	.001133	.000183	0.	....	
10,000	40,000	.001283	.000150	0.	....	
11,250	45,000	.001450	.000167	0.	....	
11,500	46,000	.001483	.000033	....	....	Elastic limit.
11,750	47,000	.001567	.000084	....	....	
12,000	48,000	.001633	.000066	....	....	
12,250	49,000	.003550	.001917	....	....	
12,500	50,000	.004417	.000867	....	....	
13,000	52,000	.007917	.003500	....	....	
13,500	54,000	.010417	.002500	....	....	
14,000	56,000	.012167	.001750	....	....	
14,500	58,000	.013917	.001750	....	....	
15,000	60,000	.015933	.002016	....	....	
15,500	62,000	.018000	.002067	....	....	
16,000	64,000	.020000	.002000	....	....	
16,500	66,000	.022500	.002500	....	....	
17,000	68,000	.025000	.002500	....	....	
17,500	70,000	.027750	.002750	....	....	
18,000	72,000	.031000	.003250	....	....	
18,500	74,000	.034250	.003250	....	....	
19,000	76,000	.0367	.002450	....	....	
19,500	78,000	.0433	.0066	....	....	
20,000	80,000	.0483	.0050	....	....	
20,500	82,000	.0533	.0050	....	....	
21,000	84,000	.0617	.0084	....	....	
21,500	86,000	.0750	.0133	....	....	
22,000	88,000	.0883	.0133	....	....	
22,240	88,960	.1133	.0250	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..........pounds.. 88,960
Elastic limit per square inch of original section..........do... 46,000
Elongation per inch after rupture..........inch.. 0.1450
Elongation per inch under strain at elastic limit..........do... .001483
Reduction in diameter at point of rupture..........do... .154
Reduction in area after rupture, per centum of original section.......... 47.2
Position of rupture..........¾ inch from neck
Character of broken surface..........silky
Elongation of inch sections..........″.39*, ″.13, ″.10, ″.08, ″.08, ″.09

8" experimental Trunnion Hoop.



H Ex 31 49 2

No. 2577.

Marks, $^{8\ \mathrm{T\ Hex}}_{\mathrm{T,\ O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000783	.000183	0.	....	
7,500	30,000	.000950	.000167	0.	....	
8,750	35,000	.001133	.000183	....	....	
9,000	36,000	.001167	.000034	....	....	
9,250	37,000	.001200	.000033	....	....	
9,500	38,000	.001233	.000033	....	....	
9,750	39,000	.001267	.000034	....	....	
10,000	40,000	.001317	.000050	....	....	
10,250	41,000	.001367	.000050	....	....	
10,500	42,000	.001400	.000033	....	....	
10,750	43,000	.001433	.000033	....	....	
11,000	44,000	.001483	.000050	....	....	Elastic limit.
11,250	45,000	.001583	.000100	....	....	
11,500	46,000	.004417	.002834	....	....	
11,750	47,000	.008350	.003933	....	....	
12,000	48,000	.009250	.000900	....	....	
12,250	49,000	.009917	.000667	....	....	
12,500	50,000	.011083	.001166	....	....	
13,000	52,000	.013100	.002017	....	....	
13,500	54,000	.015500	.002400	....	....	
14,000	56,000	.017833	.002333	....	....	
14,500	58,000	.020000	.002167	....	....	
15,000	60,000	.022750	.002750	....	....	
15,500	62,000	.025667	.002917	....	....	
16,000	64,000	.028667	.003000	....	....	
16,500	66,000	.031867	.003200	....	....	
17,000	68,000	.0367	.004833	....	....	
17,500	70,000	.0417	.0050	....	....	
18,000	72,000	.0467	.0050	....	....	
18,500	74,000	.0517	.0050	....	....	
19,000	76,000	.0633	.0116	....	....	
19,500	78,000	.0733	.0100	....	....	
20,000	80,000	.0867	.0134	....	....	
20,460	81,840	.1417	.0550	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	81,840
Elastic limit per square inch of original section	do...	44,000
Elongation per inch after rupture	inch..	0.1817
Elongation per inch under strain at elastic limit	do...	.001483
Reduction in diameter at point of rupture	do...	.134
Reduction in area after rupture, per centum of original section		41.9
Position of rupture		1″.25 from neck; oblique
Character of broken surface		silky
Elongation of inch sections		″.33*, ″.25, ″.16, ″.13, ″.12, ″.10

No. 2578.

Marks, $\overset{8\ \mathrm{T\ Hex}}{\mathrm{T_{10}\ I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	. 000083	. 000083	0.	....	
2, 500	10, 000	. 000233	. 000150	0.	....	
3, 750	15, 000	. 000417	. 000184	0.	....	
5, 000	20, 000	. 000583	. 000166	0.	....	
6, 250	25, 000	. 000733	. 000150	0.	....	
7, 500	30, 000	. 000900	. 000167	0.	....	
8, 750	35, 000	. 001067	. 000167	0.	....	
9, 000	36, 000	. 001117	. 000050	....	....	
9, 250	37, 000	. 001150	. 000033	....	....	
9, 500	38, 000	. 001183	. 000033	....	....	
9, 750	39, 000	. 001217	. 000034	....	....	
10, 000	40, 000	. 001250	. 000033	....	....	
10, 250	41, 000	. 001283	. 000033	....	....	
10, 500	42, 000	. 001317	. 000034	....	....	
10, 750	43, 000	. 001350	. 000033	....	....	
11, 000	44, 000	. 001383	. 000033	....	....	
11, 250	45, 000	. 001417	. 000034	....	....	
11, 500	46, 000	. 001450	. 000033	....	....	
11, 750	47, 000	. 001483	. 000033	....	....	
12, 000	48, 000	. 001533	. 000050	....	....	
12, 250	49, 000	. 001567	. 000034	....	....	Elastic limit.
12, 500	50, 000	. 003533	. 001966	....	....	
12, 750	51, 000	. 005033	. 001500	....	....	
13, 000	52, 000	. 007000	. 001967	....	....	
13, 500	54, 000	. 012333	. 005333	....	....	
14, 000	56, 000	. 014167	. 001834	....	....	
14, 500	58, 000	. 016250	. 002083	....	....	
15, 000	60, 000	. 018667	. 002417	....	....	
15, 500	62, 000	. 021250	. 002583	....	....	
16, 000	64, 000	. 023617	. 002367	....	....	
16, 500	66, 000	. 026667	. 003050	....	....	
17, 000	68, 000	. 029917	. 003250	....	....	
17, 500	70, 000	. 033667	. 003750	....	....	
18, 000	72, 000	. 0367	. 003033	....	....	
18, 500	74, 000	. 0400	. 0033	....	....	
19, 000	76, 000	. 0483	. 0083	....	....	
19, 500	78, 000	. 0550	. 0067	....	....	
20, 000	80, 000	. 0650	. 0100	....	....	
20, 500	82, 000	. 0800	. 0150	....	....	
21, 000	84, 000	. 1017	. 0217	....	....	
21, 090	84, 360	. 1300	. 0283	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..................................pounds.. 84, 360
Elastic limit per square inch of original section..................................do .. 49, 000
Elongation per inch after rupture..................................inch.. 0. 1883
Elongation per inch under strain at elastic limit..................................do... . 001567
Reduction in diameter at point of rupture..................................do... . 204
Reduction in area after rupture, per centum of original section.................................. 59. 3
Position of rupture..................................2 inches from neck
Character of broken surface..................................fine silky
Elongation of inch sections..................................″.08, ″.10, ″.13, ″.18, ″.48*, ″.16

No. 2579.

Marks, $^{8\,T\,Hex}_{T_{11}\,M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000067	.000067	0.	....	
2, 500	10, 000	.000233	.000166	0.	....	
3, 750	15, 000	.000400	.000167	0.	....	
5, 000	20, 000	.000567	.000167	0.	....	
6, 250	25, 000	.000717	.000150	0.	....	
7, 500	30, 000	.000883	.000166	0.	....	
8, 750	35, 000	.001067	.000184	0.	....	
9, 000	36, 000	.001100	.000033	....	....	
9, 250	37, 000	.001133	.000033	....	....	
9, 500	38, 000	.001183	.000050	....	....	
9, 750	39, 000	.001233	.000050	....	....	
10, 000	40, 000	.001267	.000034	....	....	
10, 250	41, 000	.001300	.000033	....	....	
10, 500	42, 000	.001317	.000017	....	....	
10, 750	43, 000	.001350	.000033	....	....	
11, 000	44, 000	.001383	.000033	....	....	
11, 250	45, 000	.001433	.000050	....	....	Elastic limit.
11, 500	46, 000	.002500	.001067	....	....	
11, 750	47, 000	.004000	.001500	....	....	
12, 000	48, 000	.007750	.003750	....	....	
12, 250	49, 000	.008683	.000933	....	....	
12, 500	50, 000	.009500	.000817	....	....	
13, 000	52, 000	.012333	.002833	....	....	
13, 500	54, 000	.014000	.001667	....	....	
14, 000	56, 000	.015700	.001700	....	....	
14, 500	58, 000	.018000	.002300	....	....	
15, 000	60, 000	.020167	.002167	....	....	
15, 500	62, 000	.021500	.001333	....	....	
16, 000	64, 000	.024667	.003167	....	....	
16, 500	66, 000	.028333	.003666	....	....	
17, 000	68, 000	.030667	.002334	....	....	
17, 500	70, 000	.033333	.002666	....	....	
18, 000	72, 000	.0367	.003367	....	....	
18, 500	74, 000	.0417	.0050	....	....	
19, 000	76, 000	.0467	.0050	....	....	
19, 500	78, 000	.0533	.0066	....	....	
20, 000	80, 000	.0600	.0067	....	....	
20, 500	82, 000	.0700	.0100	....	....	
21, 000	84, 000	.0850	.0150	....	....	
21, 500	86, 000	.1150	.0300	....	....	
21, 540	86, 160	.1333	.0183	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section........pounds..	86, 160
Elastic limit per square inch of original section........do...	45, 000
Elongation per inch after rupture........inch..	0. 1650
Elongation per inch under strain at elastic limit........do...	.001433
Reduction in diameter at point of rupture........do...	.174
Reduction in area after rupture, per centum of original section........	52. 2
Position of rupture........	″.85 from neck
Character of broken surface........	fine silky
Elongation of inch sections........	″.39*, ″.18, ″.13, ″.11, ″.10, ″.08

No. 2580.

Marks, $^{8\,\text{T Hex}}_{\text{T}_{1}\,\text{O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.	....	
2,500	10,000	.000267	.000167	0.	....	
3,750	15,000	.000450	.000133	0.	....	
5,000	20,000	.000633	.000183	0.	....	
6,250	25,000	.000800	.000167	0.	....	
7,500	30,000	.000983	.000183	0.	....	
8,750	35,000	.001150	.000167	0.	....	
9,000	36,000	.001183	.000033	....	....	
9,250	37,000	.001217	.000034	....	....	
9,500	38,000	.001233	.000016	....	....	
9,750	39,000	.001267	.000034	....	....	
10,000	40,000	.001300	.000033	....	....	
10,250	41,000	.001333	.000033	....	....	
10,500	42,000	.001383	.000050	....	....	
10,750	43,000	.001417	.000034	....	....	
11,000	44,000	.001450	.000033	....	....	
11,250	45,000	.001500	.000050	....	....	
11,500	46,000	.001533	.000033	....	....	
11,750	47,000	.001583	.000050	....	....	
12,000	48,000	.001650	.000067	....	....	Elastic limit.
12,250	49,000	.004833	.003183	....	....	
12,500	50,000	.006417	.001584	....	....	
12,750	51,000	.007933	.001516	....	....	
13,000	52,000	.009667	.001734	....	....	
13,500	54,000	.011333	.001666	....	....	
14,000	56,000	.013017	.001684	....	....	
14,500	58,000	.014917	.001900	....	....	
15,000	60,000	.016667	.001750	....	....	
15,500	62,000	.019000	.002333	....	....	
16,000	64,000	.021583	.002583	....	....	
16,500	66,000	.024000	.002417	....	....	
17,000	68,000	.026000	.002000	....	....	
17,500	70,000	.028667	.002667	....	....	
18,000	72,000	.031667	.003000	....	....	
18,500	74,000	.0350	.003333	....	....	
19,000	76,000	.0383	.0033	....	....	
19,500	78,000	.0433	.0050	....	....	
20,000	80,000	.0500	.0067	....	....	
20,500	82,000	.0567	.0067	....	....	
21,000	84,000	.0650	.0083	....	....	
21,500	86,000	.0567	.0117	....	....	
22,000	88,000	.0900	.0133	....	....	
22,320	89,280	.1333	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................pounds.. 89,280
Elastic limit per square inch of original section....................do... 48,000
Elongation per inch after rupture....................inch.. 0.1667
Elongation per inch under strain at elastic limit....................do... .001650
Reduction in diameter at point of rupture....................do... .184
Reduction in area after rupture, per centum of original section.................... 54.6
Position of rupture....................″.20 from middle of stem
Character of broken surface....................silky
Elongation of inch sections....................″.09, ″.12, ″.37*, ″.20, ″.12, ″.10

No. 2581.

Marks, $^{8\,\mathrm{T\,Hex}}_{\mathrm{T}_{13}\,\mathrm{O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000117	.000117	0.	....	
2,500	10,000	.000300	.000183	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000817	.000184	0.	....	
7,500	30,000	.000983	.000166	0.	....	
8,750	35,000	.001150	.000167	0.	....	
10,000	40,000	.001300	.000150	0.	....	
10,250	41,000	.001333	.000033	....	....	
10,500	42,000	.001367	.000034	....	....	
10,750	43,000	.001400	.000033	....	....	
11,000	44,000	.001417	.000017	....	....	
11,250	45,000	.001483	.000066	0.	....	
11,500	46,000	.001583	.000100	....	....	
11,750	47,000	.001633	.000050	....	....	
12,000	48,000	.001667	.000034	....	....	
12,250	49,000	.001683	.000016	....	....	
12,500	50,000	.001717	.000034	.000067	.000067	Elastic limit.
12,750	51,000	.001800	.000083	....	....	
13,000	52,000	.004667	.002867	....	....	
13,250	53,000	.006417	.001750	....	....	
13,500	54,000	.007667	.001250	....	....	
14,000	56,000	.009000	.001333	....	....	
14,500	58,000	.011017	.002017	....	....	
15,000	60,000	.012833	.001816	....	....	
15,500	62,000	.014500	.001667	....	....	
16,000	64,000	.016533	.002033	....	....	
16,500	66,000	.018617	.002084	....	....	
17,000	68,000	.020833	.002216	....	....	
17,500	70,000	.023333	.002500	....	....	
18,000	72,000	.025667	.002334	....	....	
18,500	74,000	.028333	.002666	....	....	
19,000	76,000	.031417	.003084	....	....	
19,500	78,000	.034500	.003083	....	....	
20,000	80,000	.0383	.0038	....	....	
20,500	82,000	.0433	.0050	....	....	
21,000	84,000	.0500	.0067	....	....	
21,500	86,000	.0567	.0067	....	....	
22,000	88,000	.0667	.0100	....	....	
22,500	90,000	.0833	.0166	....	....	
22,990	91,960	.1333	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................................pounds.. 91,9
Elastic limit per square inch of original section..do... 50,0
Elongation per inch after rupture..inch.. 0.16
Elongation per inch under strain at elastic limit..do... .0017
Reduction in diameter at point of rupture..do... .0
Reduction in area after rupture, per centum of original section.................................. 30.
Position of rupture...″.270 from ne
Character of broken surface, granular; dull, flaky spot at circumference; opened cracks in surface stem.
Elongation of inch sections...″.10, ″.13, ″.15, ″.29*, ″.19, ″.

No. 2582.

Marks, $^{\text{8 T Hex}}_{\text{T}_{14}\text{ I}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000067	.000067	0.	....	
2,500	10,000	.000250	.000183	0.	....	
3,750	15,000	.000417	.000167	0.	....	
5,000	20,000	.000583	.000166	0.	....	
6,250	25,000	.000750	.000167	0.	....	
7,500	30,000	.000917	.000167	0.	....	
8,750	35,000	.001083	.000166	0.	....	
9,000	36,000	.001150	.000067	....	....	
9,250	37,000	.001183	.000033	....	....	
9,500	38,000	.001233	.000050	....	....	
9,750	39,000	.001250	.000017	....	....	
10,000	40,000	.001283	.000033	....	....	
10,250	41,000	.001317	.000034	....	....	
10,500	42,000	.001350	.000033	....	....	
10,750	43,000	.001400	.000050	....	....	
11,000	44,000	.001417	.000017	....	....	
11,250	45,000	.001450	.000033	....	....	
11,500	46,000	.001483	.000033	....	....	
11,750	47,000	.001517	.000034	....	....	
12,000	48,000	.001583	.000066	....	....	
12,250	49,000	.001617	.000034	....	....	
12,500	50,000	.001650	.000033	....	....	
12,750	51,000	.001683	.000033	....	....	
13,000	52,000	.001700	.000017	....	....	
13,250	53,000	.001733	.000033	....	....	
13,500	54,000	.901750	.000017	....	....	
13,750	55,000	.001833	.000083	....	....	
14,000	56,000	.001900	.000067	....	....	Elastic limit.
14,250	57,000	.003833	.001933	....	....	
14,500	58,000	.007917	.004084	....	....	
14,750	59,000	.009583	.001666	....	....	
15,000	60,000	.010700	.001117	....	....	
15,500	62,000	.013000	.002300	....	....	
16,000	64,000	.015200	.002200	....	....	
16,500	66,000	.017333	.002133	....	....	
17,000	68,000	.019500	.002167	....	....	
17,500	70,000	.022167	.002667	....	....	
18,000	72,000	.024667	.002500	....	....	
18,500	74,000	.027667	.003000	....	....	
19,000	76,000	.030967	.003300	....	....	
19,500	78,000	.034583	.003616	....	....	
20,000	80,000	.0383	.003717	....	....	
20,500	82,000	.0450	.0067	....	....	
21,000	84,000	.0517	.0067	....	....	
21,500	86,000	.0600	.0083	....	....	
22,000	88,000	.0717	.0117	....	....	
22,500	90,000	.0917	.0200	....	....	
22,820	91,280	.1350	.0433	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	91,280
Elastic limit per square inch of original section	do...	56,000
Elongation per inch after rupture	inch..	0.1733
Elongation per inch under strain at elastic limit	do...	.001900
Reduction in diameter at point of rupture	do...	.184
Reduction in area after rupture, per centum of original section		54.6
Position of rupture		2″.85 from neck
Character of broken surface		silky
Elongation of inch sections		″.10, ″.15, ″.43,*″.15, ″.12, ″.09

No. 2583.

Marks, $^{8\,\mathrm{T\,Hex}}_{\mathrm{T}_{15}\,\mathrm{M}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000167	.000167	0.	....	
2,500	10,000	.000217	.000050	0.	....	
3,750	15,000	.000367	.000150	0.	....	
5,000	20,000	.000533	.000166	0.	....	
6,250	25,000	.000683	.000150	0.	....	
7,500	30,000	.000850	.000167	0.	....	
8,750	35,000	.001033	.000183	0.	....	
9,000	36,000	.001067	.000034	....	....	
9,250	37,000	.001100	.000033	....	....	
9,500	38,000	.001133	.000033	....	....	
9,750	39,000	.001200	.000067	....	....	
10,000	40,000	.001233	.000033	....	....	
10,250	41,000	.001267	.000034	....	....	
10,500	42,000	.001283	.000016	....	....	
10,750	43,000	.001317	.000034	....	....	
11,000	44,000	.001350	.000033	....	....	
11,250	45,000	.001367	.000017	....	....	
11,500	46,000	.001433	.000066	....	....	
11,750	47,000	.001500	.000067	....	....	Elastic limit.
12,000	48,000	.003083	.001583	....	....	
12,250	49,000	.006417	.003334	....	....	
12,500	50,000	.008667	.002250	....	....	
13,000	52,000	.010167	.001500	....	....	
13,500	54,000	.011667	.001500	....	....	
14,000	56,000	.013333	.001666	....	....	
14,500	58,000	.015200	.001867	....	....	
15,000	60,000	.017333	.002133	....	....	
15,500	62,000	.019133	.001800	....	....	
16,000	64,000	.021333	.002200	....	....	
16,500	66,000	.023750	.002417	....	....	
17,000	68,000	.026167	.002417	....	....	
17,500	70,000	.029000	.002833	....	....	
18,000	72,000	.031667	.002667	....	....	
18,500	74,000	.035500	.003833	....	....	
19,000	76,000	.0383	.0028	....	....	
19,500	78,000	.0450	.0067	....	....	
20,000	80,000	.0500	.0050	....	....	
20,500	82,000	.0567	.0067	....	....	
21,000	84,000	.0667	.0100	....	....	
21,500	86,000	.0800	.0133	....	....	
22,000	88,000	.1000	.0200	....	....	
22,240	88,960	.1400	.0400	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section........pounds.. 88,960
Elastic limit per square inch of original section........do... 47,000
Elongation per inch after rupture........inch.. 0.1917
Elongation per inch under strain at elastic limit........do... .001500
Reduction in diameter at point of rupture........do... .124
Reduction in area after rupture, per centum of original section........ 39.2
Position of rupture........2″.90 from neck
Character of broken surface........granular, 60 per centum; silky, 40 per centum
Elongation of inch sections........″.13, ″.21, ″.17, ″.36, ″.17, ″.11

No. 2584.

Marks, $^{8\,\mathrm{T\,Hex}}_{\mathrm{T_{16}\,O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000117	.000117	0.	....	
2, 500	10, 000	.000283	.000166	0.	....	
3, 750	15, 000	.000483	.000200	0.	....	
5, 000	20, 000	.000667	.000184	0.	....	
6, 250	25, 000	.000833	.000166	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
8, 750	35, 000	.001167	.000167	0.	....	
9, 000	36, 000	.001200	.000033	....	....	
9, 250	37, 000	.001217	.000017	....	....	
9, 500	38, 000	.001267	.000050	....	....	
9, 750	39, 000	.001300	.000033	....	....	
10, 000	40. 000	.001317	.000017	....	....	
10, 250	41, 000	.001350	.000033	....	....	
10, 500	42, 000	.001383	.000033	....	....	
10, 750	43, 000	.001433	.000050	....	....	
11, 000	44, 000	.001500	.000067	....	....	
11, 250	45, 000	.001550	.000050	....	....	
11, 500	46, 000	.001583	.000033	....	....	
11, 750	47, 000	.001617	.000034	....	....	Elastic limit.
12, 000	48, 000	.004300	.002683	....	....	
12, 250	49, 000	.006283	.001933	....	....	
12, 500	50, 000	.008167	.001934	....	....	
13, 000	52, 000	.010167	.002000	....	....	
13, 500	54, 000	.012750	.002583	....	....	
14, 000	56, 000	.014417	.001667	....	....	
14, 500	58, 000	.016417	.002000	....	....	
15, 000	60, 000	.018833	.002416	....	....	
15, 500	62, 000	.021000	.002167	....	....	
16, 000	64, 000	.022667	.001667	....	....	
16, 500	66, 000	.026333	.003666	....	....	
17, 000	68, 000	.029833	.003500	....	....	
17, 500	70, 000	.0333	.003467	....	....	
18, 000	72, 000	.0367	.0034	....	....	
18, 500	74, 000	.0400	.0033	....	....	
19, 000	76, 000	.0433	.0033	....	....	
19, 500	78, 000	.0483	.0050	....	....	
20, 000	80, 000	.0567	.0084	....	....	
20, 500	82, 000	.0667	.0100	....	....	
21, 000	84, 000	.0767	.0100	....	....	
21, 500	86, 000	.0983	.0216	....	....	
21, 880	87, 520	.1400	.0417	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section....................................pounds.. 87, 520
Elastic limit per square inch of original section..do... 47, 000
Elongation per inch after rupture...inch.. 0. 1700
Elongation per inch under strain at elastic limit..do... .001617
Reduction in diameter at point of rupture..do... .154
Reduction in area after rupture, per centum of original section.. 47. 2
Position of rupture...1″.85 from neck
Character of broken surface...fine; silky
Elongation of inch sections...″.10, ″.11, ″.12, ″.15, ″.39, ″.15

No. 2585.

Marks, $^{8\,\mathrm{T\,Hex}}_{\mathrm{T_{17}\,O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.		
2,500	10,000	.000283	.000183	0.		
3,750	15,000	.000467	.000184	0.		
5,000	20,000	.000633	.000166	0.		
6,250	25,000	.000800	.000167	0.		
7,500	30,000	.000967	.000167	0.		
8,750	35,000	.001133	.000166	0.		
9,000	36,000	.001183	.000050			
9,250	37,000	.001217	.000034			
9,500	38,000	.001267	.000050			
9,750	39,000	.001300	.000033			
10,000	40,000	.001333	.000033			
10,250	41,000	.001367	.000034			
10,500	42,000	.001400	.000033			
10,750	43,000	.001433	.000033			
11,000	44,000	.001483	.000050			
11,250	45,000	.001533	.000050			Elastic limit.
11,500	46,000	.008617	.007084			
11,750	47,000	.009000	.000383			
12,000	48,000	.009700	.000700			
12,250	49,000	.010433	.000733			
12,500	50,000	.011867	.001434			
13,000	52,000	.014000	.002133			
13,500	54,000	.016417	.002417			
14,000	56,000	.018933	.002516			
14,500	58,000	.021167	.002234			
15,000	60,000	.023750	.002583			
15,500	62,000	.027333	.003583			
16,000	64,000	.030200	.002867			
16,500	66,000	.034000	.003800			
17,000	68,000	.036700	.0027			
17,500	70,000	.0433	.0066			
18,000	72,000	.0500	.0067			
18,500	74,000	.0550	.0050			
19,000	76,000	.0683	.0133			
19,500	78,000	.0838	.0150			
20,000	80,000	.1067	.0234			
20,190	80,760	.1483	.0416			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds	80,760
Elastic limit per square inch of original section	do	45,000
Elongation per inch after rupture	inch	0.1850
Elongation per inch under strain at elastic limit	do	.001533
Reduction in diameter at point of rupture	do	.144
Reduction in area after rupture, per centum of original section		44.6
Position of rupture		1″.50 from neck
Character of broken surface		silky
Elongation of inch sections		″.20, ″.36*, ″.17, ″.16, ″.13, ″.09

No. 2586.

Marks, $\begin{smallmatrix}8\ \mathrm{T\ Hex}\\ \mathrm{T}_{18}\ \mathrm{I}\end{smallmatrix}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000083	.000083	0.	....	
2,500	10,000	.000267	.000184	0.	....	
3,750	15,C00	.000433	.000166	0.	....	
5,000	20,000	.000600	.000167	0.	....	
6,250	25,000	.000767	.000167	0.	....	
7,500	30,000	.000933	.000166	0.	....	
8,750	35,000	.001100	.000167	0.	....	
9,000	36,000	.001133	.000033	....	....	
9,250	37,000	.001183	.000050	....	....	
9,500	38,000	.001200	.000017	....	....	
9,750	39,000	.001233	.000033	....	....	
10,000	40,000	.001283	.000050	....	....	
10,250	41,000	.001317	.000034	....	....	
10,500	42,000	.001383	.000066	....	....	
10,750	43,000	.001417	.000034	....	....	
11,000	44,000	.001433	.000016	....	....	
11,250	45,000	.001483	.000050	....	....	
11,500	46,000	.001517	.000034	....	....	
11,750	47,000	.001567	.000050	....	....	
12,000	48,000	.001600	.000033	....	....	
12,250	49,000	.001633	.000033	....	....	
12,500	50,000	.001683	.000050	....	....	
12,750	51,000	.001733	.000050	....	....	Elastic limit.
13,000	52,000	.010200	.008467	....	....	
13,250	53,000	.010750	.000550	....	....	
13,500	54,000	.012250	.001500	....	....	
14,000	56,000	.014500	.002250	....	....	
14,500	58,000	.016667	.002167	....	....	
15,000	60,000	.019167	.002500	....	....	
15,500	62,000	.022167	.003000	....	....	
16,000	64,000	.025000	.002833	....	....	
16,500	66,000	.027333	.002333	....	....	
17,000	68,000	.030833	.003500	....	....	
17,500	70,000	.034000	.003167	....	....	
18,000	72,000	.0367	.0027	....	....	
18,500	74,000	.0433	.0066	....	....	
19,000	76,000	.0500	.0067	....	....	
19,500	78,000	.0550	.0050	....	....	
20,000	80,000	.0683	.0133	....	....	
20,500	82,000	.0833	.0150	....	....	
21,000	84,000	.1100	.0267	....	....	
21,100	84,400	.1417	.0317	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	84,400
Elastic limit per square inch of original section	do...	51,000
Elongation per inch after rupture	inch..	0.1933
Elongation per inch under strain at elastic limit	do...	.001733
Reduction in diameter at point of rupture	do...	.204
Reduction in area after rupture, per centum of original section		59.3
Position of rupture		2″.50 from neck
Character of broken surface		fine silky
Elongation of inch sections		″.09, ″.12, ″.13, ″.39*, ″.28, ″.15

10-INCH STEEL B. L. RIFLE NO. 1.

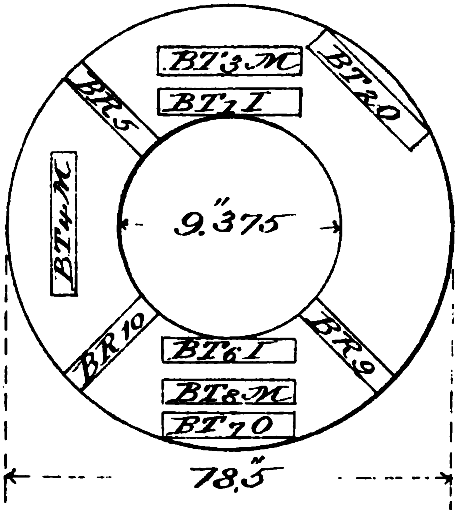
STEEL SPECIMENS FROM

TUBE, JACKET, TRUNNION HOOP, AND HOOPS.

10" Steel B. L. Rifle No. 1

Tube

Breech end



TUBE—WHITWORTH STEEL.

No. 2740.

Marks, ${}^{10\,R_1\,T}_{B\,T_1\,I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000200	.000200	.000033	.000033	
2, 500	10, 000	.000400	.000200	.000067	.000034	
3, 750	15, 000	.000633	.000233	.000067	0.	
5, 000	20, 000	.000833	.000200	.000067	0.	
6, 250	25, 000	.000967	.000134	.000067	0.	
7, 500	30, 000	.001200	.000233	.000100	.000033	
7, 750	31, 000	.001233	.000033	....	....	
8, 000	32, 000	.001267	.000034	....	....	
8, 250	33, 000	.001300	.000033	....	....	Elastic limit.
8, 500	34, 000	.001500	.000200	....	....	
8, 750	35, 000	.002667	.001167	.001333	.001233	
9, 000	36, 000	.003333	.000666	....	....	
9, 250	37, 000	.003600	.000267	....	....	
9, 500	38, 000	.004267	.000667	....	....	
9, 750	39, 000	.005000	.000733	....	....	
10, 000	40, 000	.005800	.000800	....	....	
10, 250	41, 000	.006600	.000800	....	....	
10, 500	42, 000	.007433	.000833	....	....	
10, 750	43, 000	.008167	.000734	....	....	
11, 000	44, 000	.009067	.000900	....	....	
11, 250	45, 000	.009900	.000833	....	....	
11, 500	46, 000	.011167	.001267	....	....	
11, 750	47, 000	.012067	.000900	....	....	
12, 000	48, 000	.012800	.000733	....	....	
12, 250	49, 000	.014000	.001200	....	....	
12, 500	50, 000	.014733	.000733	....	....	
13, 000	52, 000	.017167	.002434	....	....	
13, 500	54, 000	.019500	.002333	....	....	
14, 000	56, 000	.022167	.002667	....	....	
14, 500	58, 000	.025000	.002833	....	....	
15, 000	60, 000	.028167	.003167	....	....	
15, 500	62, 000	.031667	.003500	....	....	
16, 000	64, 000	.035500	.003833	....	....	
16, 500	66, 000	.039500	.004000	....	....	
17, 000	68, 000	.0433	.0038	....	....	
15, 500	70, 000	.0533	.0100	....	....	
18, 000	72, 000	.0633	.0100	....	....	
18, 500	74, 000	.0700	.0067	....	....	
19, 000	76, 000	.0833	.0133	....	....	
19, 500	78, 000	.1033	.0200	....	....	
19, 900	79, 600	.1600	.0567	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	79, 600
Elastic limit per square inch of original section	do ..	33, 000
Elongation per inch after rupture	inch..	0. 2000
Elongation per inch under strain at elastic limit	do...	.001300
Reduction in diameter at point of rupture	do...	.104
Reduction in area after rupture, per centum of original section		33. 5
Position of rupture		¾ inch from neck
Character of broken surface		granular, 60 per centum; silky, 40 per centum
Elongation of inch sections		″.30*, ″.17, ″.13

No. 2741.

Marks, $\frac{10\ R_1\ T}{B\ T_2\ O}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000383	.000200	0.	....	
3, 750	15, 000	.000500	.000167	0.	....	
5, 000	20, 000	.000667	.000167	0.	....	
6, 250	25, 000	.000833	.000166	0.	....	
7, 500	30, 000	.001000	.000167	0.	....	
7, 750	31, 000	.001033	.000033	....	....	
8, 000	32, 000	.001067	.000034	....	....	
8, 250	33, 000	.001100	.000033	....	....	
8, 500	34, 000	.001167	.000067	....	....	
8, 750	35, 000	.001167	0.	.000033	.000033	
9, 000	36, 000	.001200	.000033	....	....	
9, 250	37, 000	.001267	.000067	....	....	Elastic limit.
9, 500	38, 000	.002000	.000733	....	....	
9, 750	39, 000	.002333	.000333	....	....	
10, 000	40, 000	.002600	.000267	....	....	
10, 250	41, 000	.002833	.000233	....	....	
10, 500	42, 000	.003133	.000300	....	....	
10, 750	43, 000	.003400	.000267	....	....	
11, 000	44, 000	.003767	.000367	....	....	
11, 250	45, 000	.004183	.000366	....	....	
11, 500	46, 000	.005000	.000867	....	....	
11, 750	47, 000	.005600	.000600	....	....	
12, 000	48, 000	.005933	.000333	....	....	
12, 250	49, 000	.006667	.000734	....	....	
12, 500	50, 000	.007833	.001166	....	....	
13, 000	52, 000	.009667	.001834	....	....	
13, 500	54, 000	.011667	.002000	....	....	
14, 000	56, 000	.013833	.002166	....	....	
14, 500	58, 000	.015667	.001834	....	....	
15, 000	60, 000	.017567	.001900	....	....	
15, 500	62, 000	.019867	.002300	....	....	
16, 000	64, 000	.022333	.002466	....	....	
16, 500	66, 000	.025000	.002667	....	....	
17, 000	68, 000	.038333	.003333	....	....	
17, 500	70, 000	.032000	.003367	....	....	
18, 000	72, 000	.035000	.003000	....	....	
18, 500	74, 000	.0400	.0050	....	....	
19, 000	76, 000	.0433	.0033	....	....	
19, 500	78, 000	.0467	.0034	....	....	
20, 000	80, 000	.0567	.0100	....	....	
20, 500	82, 000	.0667	.0100	....	....	
21, 000	84, 000	.0800	.0133	....	....	
21, 440	85, 760	.1133	.0333	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	85, 760
Elastic limit per square inch of original section	do...	37, 000
Elongation per inch after rupture	inch..	0. 2167
Elongation per inch under strain at elastic limit	do...	.001267
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44. 6
Position of rupture		".85 from neck
Character of broken surface		silky
Elongation of inch sections		".10, ".17, ".38"

No. 2739.

Marks, $\overset{10\ R,\ T}{B\ T,\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000333	.000200	0.	....	
3, 750	15, 000	.000467	.000134	0.	....	
5, 000	20, 000	.000633	.000166	0.	....	
6, 250	25, 000	.000800	.000167	0.	....	
7, 500	30, 000	.001033	.000233	0.	....	
7, 750	31, 000	.001067	.000034	....	....	
8, 000	32, 000	.001067	0.	....	....	
8, 250	33, 000	.001100	.000033	....	....	
8, 500	34, 000	.001167	.000067	....	....	
8, 750	35, 000	.001233	.000066	.000033	.000033	Elastic limit.
9, 000	36, 000	.001433	.000200	....	....	
9, 250	37, 000	.001733	.000300	....	....	
9, 500	38, 000	.002267	.000534	....	....	
9, 750	39, 000	.002867	.000600	....	....	
10, 000	40, 000	.003333	.000466	....	....	
10, 250	41, 000	.004000	.000667	....	....	
10, 500	42, 000	.004367	.000367	....	....	
10, 750	43, 000	.005000	.000633	....	....	
11, 000	44, 000	.005833	.000833	....	....	
11, 250	45, 000	.006600	.000767	....	....	
11, 500	46, 000	.007333	.000733	....	....	
11, 750	47, 000	.008067	.000734	....	....	
12, 000	48, 000	.009167	.001100	....	....	
12, 250	49, 000	.010000	.000833	....	....	
12, 500	50, 000	.011000	.001000	....	....	
13, 000	52, 000	.012500	.001500	....	....	
13, 500	54, 000	.014867	.002367	....	....	
14, 000	56, 000	.017333	.002466	....	....	
14, 500	58, 000	.019667	.002334	....	....	
15, 000	60, 000	.022333	.002666	....	....	
15, 500	62, 000	.024667	.002334	....	....	
16, 000	64, 000	.027400	.002733	....	....	
16, 500	66, 000	.030833	.003433	....	....	
17, 000	68, 000	.034333	.003500	....	....	
17, 500	70, 000	.038167	.003834	....	....	
18, 000	72, 000	.0433	.005133	....	....	
18, 500	74, 000	.0500	.0067	....	....	
19, 000	76, 000	.0567	.0067	....	....	
19, 500	78, 000	.0667	.0100	....	....	
20, 000	80, 000	.0767	.0100	....	....	
20, 500	82, 000	.0933	.0166	....	....	
20, 970	83, 880	.1433	.0500	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	83, 880
Elastic limit per square inch of original section	do...	35, 000
Elongation per inch after rupture	inch..	0. 2200
Elongation per inch under strain at elastic limit	do...	.001233
Reduction in diameter at point of rupture	do...	.144
Reduction in area after rupture, per centum of original section		44. 6
Position of rupture		1″.25 from neck
Character of broken surface		silky
Elongation of inch sections		″.14, ″.32*, ″.20

No. 2738.

Marks, $\overset{10\ R \mid T}{B\ T_4\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000133	.000133	0.	....	
2, 500	10, 000	.000267	.000134	0.	....	
3, 750	15, 000	.000433	.000166	0.	....	
5, 000	20, 000	.000600	.000167	0.	....	
6, 250	25, 000	.000767	.000167	0.	....	
7, 500	30, 000	.001000	.000233	0.	....	
7, 750	31, 000	.001033	.000033	....	....	
8, 000	32, 000	.001100	.000067	....	....	
8, 250	33, 000	.001167	.000067	....	....	
8, 500	34, 000	.001267	.000100	....	....	
8, 750	35, 000	.001333	.000066	.000133	.000133	Elastic limit.
9, 000	36, 000	.001500	.000167	....	....	
9, 250	37, 000	.002667	.001167	....	....	
9, 500	38, 000	.003167	.000500	....	....	
9, 750	39, 000	.003600	.000433	....	....	
10, 000	40, 000	.003800	.000200	....	....	
10, 250	41, 000	.004267	.000467	....	....	
10, 500	42, 000	.004767	.000500	....	....	
10, 750	43, 000	.005333	.000566	....	....	
11, 000	44, 000	.006500	.001167	....	....	
11, 250	45, 000	.007333	.000813	....	....	
11, 500	46, 000	.008000	.000667	....	....	
11, 750	47, 000	.008667	.000667	....	....	
12, 000	48, 000	.009667	.001000	....	....	
12, 250	49, 000	.010433	.000766	....	....	
12, 500	50, 000	.011500	.001067	....	....	
13, 000	52, 000	.013333	.001833	....	....	
13, 500	54, 000	.015500	.002167	....	....	
14, 000	56, 000	.017667	.002167	....	....	
14, 500	58, 000	.019933	.002266	....	....	
15, 000	60, 000	.022500	.002567	....	....	
15, 500	62, 000	.025333	.002833	....	....	
16, 000	64, 000	.028000	.002667	....	....	
16, 500	66, 000	.031367	.003367	....	....	
17, 000	68, 000	.035333	.003966	....	....	
17, 500	70, 000	.039333	.004000	....	....	
18, 000	72, 000	.0433	.003967	....	....	
18, 500	74, 000	.0500	.0067	....	....	
19, 000	76, 000	.0600	.0100	....	....	
19, 500	78, 000	.0700	.0100	....	....	
20, 000	80, 000	.0800	.0100	....	....	
20, 500	82, 000	.1033	.0233	....	....	
20, 730	82, 920	.1500	.0467	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	82, 920
Elastic limit per square inch of original section	do...	35, 000
Elongation per inch after rupture	inch..	0. 2123
Elongation per inch under strain at elastic limit	do...	.001333
Reduction in diameter at point of rupture	do...	′. 124
Reduction in area after rupture, per centum of original section		39. 2
Position of rupture		1″.40 from neck
Character of broken surface		silky; slightly granular
Elongation of inch sections		″.20, ″.32*, ″.12

No. 2742.

Marks, $^{10\,E_1\,T}_{\;B\;R.}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000150	.000150	0.	....	
2, 500	10, 000	.000300	.000150	0.	....	
3, 750	15, 000	.000500	.000200	0.	....	
5, 000	20, 000	.000650	.000150	0.	....	
6, 250	25, 000	.000800	.000150	0.	....	
7, 500	30, 000	.000950	.000150	0.	....	
7, 750	31, 000	.001000	.000050	....	....	Elastic limit.
8, 000	32, 000	.001400	.000400	....	....	
8, 250	33, 000	.001550	.000150	....	....	
8, 500	34, 000	.001750	.000200	....	....	
8, 750	35, 000	.002150	.000400	.000850	.000850	
9, 000	36, 000	.002450	.000300	....	....	
9, 250	37, 000	.002700	.000250	....	....	
9, 500	38, 000	.003400	.000700	....	....	
9, 750	39, 000	.003900	.000500	....	....	
10, 000	40, 000	.004500	.000600	....	....	
10, 250	41, 000	.005000	.000500	....	....	
10, 500	42, 000	.005600	.000600	....	....	
10, 750	43, 000	.006250	.000650	....	....	
11, 000	44, 000	.007000	.000750	....	....	
11, 250	45, 000	.007800	.000800	....	....	
11, 500	46, 000	.008600	.000800	....	....	
11, 750	47, 000	.009250	.000650	....	....	
12, 000	48, 000	.010250	.001000	....	....	
12, 250	49, 000	.011200	.000950	....	....	
12, 500	50, 000	.012250	.001050	....	....	
13, 000	52, 000	.014500	.002250	....	....	
13, 500	54, 000	.016700	.002200	....	....	
14, 000	56, 000	.019000	.002300	....	....	
14, 500	58, 000	.021650	.002650	....	....	
15, 000	60, 000	.024250	.002600	....	....	
15, 500	62, 000	.027000	.002750	....	....	
16, 000	64, 000	.030250	.003250	....	....	
16, 500	66, 000	.034000	.003750	....	....	
17, 000	68, 000	.038500	.004500	....	....	
17, 500	70, 000	.043000	.004500	....	....	
18, 000	72, 000	.048250	.005250	....	....	
18, 500	74, 000	.054750	.006500	....	....	
19, 000	76, 000	.0600	.005250	....	....	
19, 500	78, 000	.0750	.0150	....	....	
20, 000	80, 000	.1000	.0250	....	....	
20, 150	80, 600	.1200	.0200	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	80, 600
Elastic limit per square inch of original section	do...	31, 000
Elongation per inch after rupture	inch..	0. 1550
Elongation per inch under strain at elastic limit	do...	.001000
Reduction in diameter at point of rupture	do...	.084
Reduction in area after rupture, per centum of original section		27. 6
Position of rupture		″.35 from neck
Character of broken surface		granular; dull silky spot at the circumference
Elongation of inch sections.		″.23*, ″.08

No. 699.

Marks, $\frac{\text{10 R, T}}{\text{B T, I}}$
Length, 5″.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000133	.000133	0.	....	
5,000	10,000	.000267	.000134	0.	....	
7,500	15,000	.000467	.000200	0.	....	
10,000	20,000	.000633	.000166	0.	....	
12,500	25,000	.000833	.000200	0.	....	
13,000	26,000	.000867	.000034	....	....	
13,500	27,000	.000900	.000033	....	....	
14,000	28,000	.000933	.000033	....	....	
14,500	29,000	.000967	.000034	....	....	
15,000	30,000	.001000	.000033	.000033	.000033	
15,500	31,000	.001067	.000067	....	....	
16,000	32,000	.001100	.000033	....	....	
16,500	33,000	.001167	.000067	....	....	
17,000	34,000	.001200	.000033	....	....	
17,500	35,000	.001267	.000067	.000067	.000034	Elastic limit.
18,000	36,000	.001500	.000233	....	....	
18,500	37,000	.002067	.000567	....	....	
19,000	38,000	.002600	.000533	....	....	
19,500	39,000	.003033	.000433	....	....	
20,000	40,000	.003667	.000634	....	....	
20,500	41,000	.004133	.000466	....	....	
21,000	42,000	.004900	.000767	....	....	
21,500	43,000	.005500	.000600	....	....	
22,000	44,000	.006400	.000900	....	....	
36,860	73,720	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds.. 35,000
Compression per inch under stress at elastic limit ....inch.. 0.001267
Ultimate strength per square inch of original section ....pounds.. 73,720
Manner of failure ....triple flexure

No. 700.

Marks, $^{10\ R_1\ T}_{13\ T_7\ O}$
Length, 4″.992.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000233	.000133	0.	....	
7, 500	15, 000	.000433	.000200	0.	....	
10, 000	20, 000	.000600	.000167	0.	....	
12, 500	25, 000	.000800	.000200	0.	....	
13, 000	26, 000	.000833	.000033	....	....	
13, 500	27, 000	.000833	0.	....	....	
14, 000	28, 000	.000867	.000034	....	....	
14, 500	29, 000	.000900	.000033	....	....	
15, 000	30, 000	.000933	.000033	— .000033	— .000033	
15, 500	31, 000	.000967	.000034	....	....	
16, 000	32, 000	.001000	.000033	....	....	
16, 500	33, 000	.010033	.000033	....	....	
17, 000	34, 000	.001100	.000067	....	....	
17, 500	35, 000	.001133	.000033	— .000033	0.	
18, 000	36, 000	.001133	0.	....	....	
18, 500	37, 000	.001167	.000034	....	....	
19, 000	38, 000	.001233	.000066	....	....	
19, 500	39, 000	.001267	.000034	....	....	
20, 000	40, 000	.001300	.000033	0.	.000033	Elastic limit.
20, 500	41, 000	.001533	.000233	....	....	
21, 000	42, 000	.001933	.000400	....	....	
21, 500	43, 000	.002300	.000367	....	....	
22, 000	44, 000	.027000	.000400	....	....	
22, 500	45, 000	.003267	.000567	....	....	
23, 000	46, 000	.003900	.000633	....	....	
23, 500	47, 000	.004500	.000600	....	....	
24, 000	48, 000	.005200	.000700	....	....	
24, 500	49, 000	.005600	.000400	....	....	
25, 000	50, 000	.006567	.000967	....	....	
40, 500	81, 000	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	40, 000
Compression per inch under stress at elastic limit	inch...	0.001300
Ultimate strength per square inch of original section	pounds..	81, 000
Manner of failure		triple flexure

No. 701.

Marks, $\begin{matrix}10\ R_1\ T\\ B\ T_2\ M\end{matrix}$
Length, 4''.995.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000133	.000133	0.	....	
5,000	10,000	.000300	.000167	0.	....	
7,500	15,000	.000467	.000167	0.	....	
10,000	20,000	.000633	.000166	0.	....	
12,500	25,000	.000833	.000200	0.	....	
13,000	26,000	.000867	.000034	....	....	
13,500	27,000	.000900	.000033	....	....	
14,000	28,000	.000933	.000033	....	....	
14,500	29,000	.000967	.000034	....	....	
15,000	30,000	.001000	.000033	.000033	.000033	
15,500	31,000	.001067	.000067	....	....	
16,000	32,000	.001133	.000066	....	....	
16,500	33,000	.001200	.000067	....	....	Elastic limit.
17,000	34,000	.001600	.000400	....	....	
17,500	35,000	.002133	.000533	.000867	.000834	
18,000	36,000	.002433	.000300	....	....	
18,500	37,000	.002867	.000434	....	....	
19,000	38,000	.003267	.000400	....	....	
19,500	39,000	.004000	.000733	....	....	
20,000	40,000	.004367	.000367	....	....	
20,500	41,000	.005000	.000633	....	....	
21,000	42,000	.005667	.000667	....	....	
21,500	43,000	.006300	.000633	....	....	
22,000	44,000	.007100	.000800	....	....	
36,750	73,500	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	33,000
Compression per inch under stress at elastic limit	inch..	0.001200
Ultimate strength per square inch of original section	pounds .	73,500
Manner of failure		triple flexure

No. 697.

Marks, $^{10\ R_1\ T}_{\ \ B\ R_2}$
Length, 4″.419.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000267	.000167	0.	....	
7,500	15,000	.000433	.000166	0.	....	
10,000	20,000	.000600	.000167	0.	....	
12,500	25,000	.000767	.000167	0.	....	
13,000	26,000	.000800	.000033	....	....	
13,500	27,000	.000833	.000033	....	....	
14,000	28,000	.000900	.000067	....	....	
14,500	29,000	.000933	.000033	....	....	
15,000	30,000	.001000	.000067	.000033	.000033	
15,500	31,000	.001033	.000033	....	....	
16,000	32,000	.001067	.000034	....	....	
16,500	33,000	.001133	.000066	....	....	
17,000	34,000	.001200	.000067	....	....	Elastic limit.
17,500	35,000	.001800	.000600	.000667	.000634	
18,000	36,000	.002233	.000433	....	....	
18,500	37,000	.002600	.000367	....	....	
19,000	38,000	.003200	.000600	....	....	
19,500	39,000	.003667	.000467	....	....	
20,000	40,000	.004167	.000500	....	....	
20,500	41,000	.004700	.000533	....	....	
21,000	42,000	.005300	.000600	....	....	
21,500	43,000	.005967	.000667	....	....	
22,000	44.000	.006833	.000666	....	....	
41,380	82,760	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section ....pounds..	34,000
Compression per inch under stress at elastic limit....................inch..	0.001200
Ultimate strength per square inch of original section....................pounds..	82,760
Manner of failure....................	triple flexure

No. 698.

Marks, $\overset{10\ \mathrm{R,\ T}}{\mathrm{B\ R}_{10}}$
Length, 4''.423.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000233	.000133	0.	....	
7, 500	15, 000	.000433	.000200	0.	....	
10, 000	20, 000	.000633	.000200	0.	....	
12, 500	25, 000	.000833	.000200	0.	....	
13, 000	26, 000	.000867	.000034	....	....	
13, 500	27, 000	.000900	.000033	....	....	
14, 000	28, 000	.000933	.000033	....	....	
14, 500	29, 000	.000967	.000034	....	....	
15, 000	30, 000	.001000	.000033	.000067	.000067	
15, 500	31, 000	.001067	.000067	....	....	
16, 000	32, 000	.001100	.000033	....	....	
16, 500	33, 000	.001167	.000067	....	....	
17, 000	34, 000	.001233	.000066	....	....	Elastic limit.
17, 500	35, 000	.001633	.000400	.000567	.000500	
18, 000	36, 000	.002167	.000534	....	....	
18, 500	37, 000	.002700	.000533	....	....	
19, 000	38, 000	.003200	.000500	....	....	
19, 500	39, 000	.003700	.000500	....	....	
20, 000	40, 000	.004133	.000433	....	....	
20, 500	41, 000	.004600	.000467	....	....	
21, 000	42, 000	.005467	.000867	....	....	
21, 500	43, 000	.005000	.000433	....	....	
22, 000	44, 000	.006533	.000633	....	....	
40, 420	80, 840	....	....	....	....	Ultimate strength.

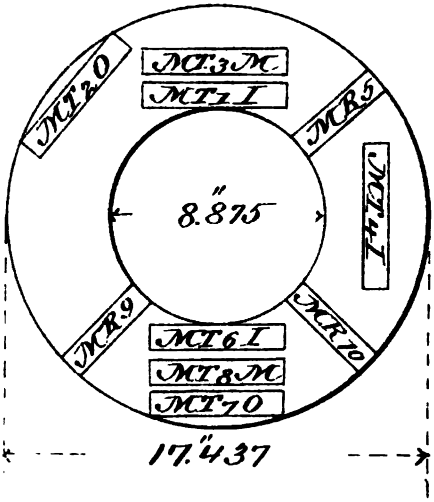
General summary.

Elastic limit per square inch of original section	pounds..	34, 000
Compression per inch under stress at elastic limit	inch..	0. 001233
Ultimate strength per square inch of original section	pounds..	80, 840
Manner of failure		triple flexure

10" Steel B. L. Rifle No. 1

Tube

Muzzle end



No. 2657.

Marks, $^{10\ R,\ T}_{M\ T,\ I}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	....	....	
2,500	10,000	.000233	.000133	....	....	
3,750	15,000	.000400	.000167	....	....	
5,000	20,000	.000633	.000233	....	....	
6,250	25,000	.000833	.000200	....	....	
7,500	30,000	.001100	.000267	.000100	.000100	
7,750	31,000	.001167	.000067	....	....	Elastic limit.
8,000	32,000	.001333	.000166	....	....	
8,250	33,000	.001667	.000334	....	....	
8,500	34,000	.002167	.000500	....	....	
8,750	35,000	.002667	.000500	.001367	.001267	
9,000	36,000	.002900	.000233	....	....	
9,250	37,000	.003133	.000233	....	....	
9,500	38,000	.003500	.000367	....	....	
9,750	39,000	.003767	.000267	....	....	
10,000	40,000	.004400	.000633	....	....	
10,250	41,000	.004767	.000367	....	....	
10,500	42,000	.005200	.000433	....	....	
10,750	43,000	.005667	.000467	....	....	
11,000	44,000	.006500	.000833	....	....	
11,250	45,000	.006900	.000400	....	....	
11,500	46,000	.007467	.000567	....	....	
11,750	47,000	.008100	.000633	....	....	
12,000	48,000	.008833	.000733	....	....	
12,250	49,000	.009567	.000734	....	....	
12,500	50,000	.010333	.000766	....	....	
13,000	52,000	.011767	.001434	....	....	
13,500	54,000	.013733	.001966	....	....	
14,000	56,000	.015667	.001934	....	....	
14,500	58,000	.017733	.002066	....	....	
15,000	60,000	.019867	.002134	....	....	
15,500	62,000	.022400	.002533	....	....	
16,000	64,000	.025033	.002633	....	....	
16,500	66,000	.028000	.002967	....	....	
17,000	68,000	.031333	.003333	....	....	
17,500	70,000	.035000	.003667	....	....	
18,000	72,000	.038333	.003333	....	....	
18,500	74,000	.041667	.003334	....	....	
19,000	76,000	.0533	.011633	....	....	
19,500	78,000	.0600	.0067	....	....	
20,000	80,000	.0667	.0067	....	....	
20,500	82,000	.0767	.0100	....	....	
21,000	84,000	.0967	.0200	....	....	
21,450	85,800	.1600	.0633	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	85,800
Elastic limit per square inch of original section	do...	31,000
Elongation per inch after rupture	inch..	0.2100
Elongation per inch under strain at elastic limit	do...	.001167
Reduction in diameter at point of rupture	do...	.114
Reduction in area after rupture, per centum of original section		36.4
Position of rupture		½ inch from neck
Character of broken surface		granular; radiating from a silky spot at the circumference
Elongation of inch sections		″.30*, ″.18, ″.15

No. 2658.

Marks, $\substack{10\ \mathrm{R,\ T} \\ \mathrm{M\ T,\ O}}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,230	5,000	.000133	.000133	0.	....	
2,500	10,000	.000267	.000134	0.	....	
3,750	15,000	.000433	.000166	0.	....	
5,000	20,000	.000633	.000200	0.	....	
6,250	25,000	.000767	.000134	0.	....	
7,500	30,000	.001000	.000233	0.	....	
7,750	31,000	.001033	.000033	....	....	
8,000	32,000	.001067	.000034	....	....	Elastic limit.
8,250	33,000	.006300	.005233	....	....	
8,500	34,000	.007467	.001167	....	....	
8,750	35,000	.007933	.000466	....	....	
9,000	36,000	.009000	.001067	....	....	
9,250	37,000	.009667	.000667	....	....	
9,500	38,000	.010833	.001166	....	....	
9,750	39,000	.012000	.001167	....	....	
10,000	40,000	.012700	000700	....	....	
10,250	41,000	.013567	.000867	....	....	
10,500	42,000	.014833	.001266	....	....	
10,750	43,000	.015833	.001000	....	....	
11,000	44,000	.017067	.001234	....	....	
11,250	45,000	.018033	.000966	....	....	
11,500	46,000	.019500	.001467	....	....	
11,750	47,000	.020667	.001167	....	....	
12,000	48,000	.022000	.001333	....	....	
12,250	49,000	.023467	.001467	....	....	
12,500	50,000	.025333	.001866	....	....	
13,000	52,000	.028400	.003067	....	....	
13,500	54,000	.032000	.003600	....	....	
14,000	56,000	.036167	.004167	....	....	
14,500	58,000	.038333	.002166	....	....	
15,000	60,000	.041667	.003334	....	....	
15,500	62,000	.0533	.011633	....	....	
16,000	64,000	.0633	.0100	....	....	
16,500	66,000	.0700	.0067	....	....	
17,000	68,000	.0867	.0167	....	....	
17,500	70,000	.1033	.0166	....	....	
18,000	72,000	.1567	.0534	....	....	
18,060	72,240	.1800	.0233	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section..................pounds..	72,240
Elastic limit per square inch of original section..................do...	32,000
Elongation per inch after rupture..................inch..	0.2600
Elongation per inch under strain at elastic limit..................do...	.001067
Reduction in diameter at point of rupture..................do..	.134
Reduction in area after rupture, per centum of original section..................	41.9
Position of rupture..................	″.90 from neck
Character of broken surface..................	silky
Elongation of inch sections..................	″.16, ″.24, ″.38

No. 2659.

Marks, $^{10\ R,\ T}_{M\ T,\ M}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000100	.000100	0.		
2,500	10,000	.000233	.000183	0.		
3,750	15,000	.000400	.000167	0.		
5,000	20,000	.000567	.000167	0.		
6,250	25,000	.000733	.000166	0.		
7,500	30,000	.000967	.000234	0.		
7,750	31,000	.001000	.000033			
8,000	32,000	.001033	.000033			
8,250	33,000	.001100	.000067			Elastic limit.
8,500	34,000	.001400	.000300			
8,750	35,000	.002133	.000733			
9,000	36,000	.002800	.000667			
9,250	37,000	.003333	.000533			
9,500	38,000	.004167	.000834			
9,750	39,000	.004767	.000600			
10,000	40,000	.005667	.000900			
10,250	41,000	.006333	.000666			
10,500	42,000	.007267	.000934			
10,750	43,000	.008100	.000833			
11,000	44,000	.008833	.000733			
11,250	45,000	.009800	.000967			
11,500	46,000	.010733	.000933			
11,750	47,000	.011667	.000934			
12,000	48,000	.012667	.001000			
12,250	49,000	.013567	.000900			
12,500	50,000	.014733	.001166			
13,000	52,000	.017067	.002334			
13,500	54,000	.019667	.002600			
14,000	56,000	.022500	.002833			
14,500	58,000	.025667	.003167			
15,000	60,000	.028667	.003000			
15,500	62,000	.033000	.004333			
16,000	64,000	.036667	.003667			
16,500	66,000	.0400	.003333			
17,000	68,000	.0500	.0100			
17,500	70,000	.0567	.0067			
18,000	72,000	.0667	.0100			
18,500	74,000	.0767	.0100			
19,000	76,000	.0967	.0200			
19,500	78,000	.1400	.0433			
19,550	78,200	.1700	.0300			Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	78,200
Elastic limit per square inch of original section	do...	33,000
Elongation per inch after rupture	inch..	0.2367
Elongation per inch under strain at elastic limit	do...	.001100
Reduction in diameter at point of rupture	do...	.084
Reduction in area after rupture, per centum of original section		27.6
Position of rupture		1″.60 from neck
Character of broken surface		granular; radiating from a dull silky spot at circumference
Elongation of inch sections		″.19, ″.31*, ″.21

No. 2660.

Marks, $^{10\ B_1\ T}_{M\ T_4\ M}$
Diameter, ".564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1,000	0.	0.	0.	0.	Initial load.
1,250	5,000	.000133	.000123	0.	....	
2,500	10,000	.000300	.000167	0.	....	
3,750	15,000	.000467	.000167	0.	....	
5,000	20,000	.000633	.000166	0.	....	
6,250	25,000	.000867	.000234	.000033	.000033	
7,500	30,000	.001133	.000266	.000133	.000100	Elastic limit.
7,750	31,000	.001233	.000100	....	....	
8,000	32,000	.001333	.000100	....	....	
8,250	33,000	.001567	.000234	....	....	
8,500	34,000	.001933	.000366	....	....	
8,750	35,000	.002600	.000667	....	....	
9,000	36,000	.003733	.001133	....	....	
9,250	37,000	.004333	.000600	....	....	
9,500	38,000	.005167	.000834	....	....	
9,750	39,000	.006000	.000833	....	....	
10,000	40,000	.006767	.000767	....	....	
10,250	41,000	.007500	.000733	....	....	
10,500	42,000	.008433	.000933	....	....	
10,750	43,000	.009167	.000734	....	....	
11,000	44,000	.010067	.000900	....	....	
11,250	45,000	.010833	.000766	....	....	
11,500	46,000	.012000	.001167	....	....	
11,750	47,000	.012833	.001683	....	....	
12,000	48,000	.014000	.001167	....	....	
12,250	49,000	.015000	.001000	....	....	
12,500	50,000	.016333	.001333	....	....	
13,000	52,000	.018667	.002334	....	....	
13,500	54,000	.021333	.002666	....	....	
14,000	56,000	.024367	.003034	....	....	
14,500	58,000	.027333	.002966	....	....	
15,000	60,000	.030667	.001334	....	....	
15,500	62,000	.034667	.004000	....	....	
16,000	64,000	.039000	.004333	....	....	
16,500	66,000	.0433	.0043	....	....	
17,000	68,000	.0500	.0067	....	....	
17,500	70,000	.0600	.0100	....	....	
18,000	72,000	.0700	.0100	....	....	
18,500	74,000	.0833	.0133	....	....	
19,000	76,000	.1033	.0200	....	....	
19,430	77,720	.1700	.0667	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	77,720
Elastic limit per square inch of original section	do...	30,000
Elongation per inch after rupture	inch..	0.2567
Elongation per inch under strain at elastic limit	do...	.001133
Reduction in diameter at point of rupture	do...	.1004
Reduction in area after rupture, per centum of original section		30.6
Position of rupture		1.12 inches from neck
Character of broken surface		granular, 50 per centum; silky, 50 per centum
Drew down to		".46 diameter ½ inch from point of rupture
Elongation of inch sections		".28*, ".32, ".17

No. 2661.

Marks, $^{10\,R_1\,T}_{M\,R_2}$
Diameter, ″.564.
Sectional area, .25 square inch.

Applied loads.		Elongation per inch.	Successive elongation per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
250	1, 000	0.	0.	0.	0.	Initial load.
1, 250	5, 000	.000050	.000050	0.	....	
2, 500	10, 000	.000200	.000150	0.	....	
3, 750	15, 000	.000400	.000200	0.	....	
5, 000	20, 000.	.000650	.000250	.000000	.000000	
5, 750	23, 000	.000900	.000250	....	....	Elastic limit.
6, 000	24, 000	.001000	.000100	....	....	
6, 250	25, 000	.001150	.000150	.000200	.000200	
6, 500	26, 000	.001250	.000100	....	....	
6, 750	27, 000	.001400	.000150	....	....	
7, 000	28, 000	.001650	.000250	....	....	
7, 250	29, 000	.002000	.000350	....	....	
7, 500	30, 000	.002300	.000300	.001150	.000950	
7, 750	31, 000	.002600	.000300	....	....	
8, 000	32, 000	.002950	.000350	....	....	
8, 250	33, 000	.003200	.000250	....	....	
8, 500	34, 000	.003900	.000700	....	....	
8, 750	35, 000	.004400	.000500	....	....	
9, 000	36, 000	.005000	.000600	....	....	
9, 250	37, 000	.005400	.000400	....	....	
9, 500	38, 000	.006000	.000600	....	....	
9, 750	39, 000	.006600	.000600	....	....	
10, 000	40, 000	.007500	.000900	....	....	
10, 250	41, 000	.008150	.000650	....	....	
10, 500	42, 000	.009000	.000850	....	....	
10, 750	43, 000	.009800	.000800	....	....	
11, 000	44, 000	.010650	.000850	....	....	
11, 250	45, 000	.011550	.000900	....	....	
11, 500	46, 000	.012500	.000950	....	....	
11, 750	47, 000	.013400	.000900	....	....	
12, 000	48, 000	.014500	.001100	....	....	
12, 250	49, 000	.015600	.001100	....	....	
12, 500	50, 000	.016750	.001150	....	....	
13, 000	52, 000	.019050	.002300	....	....	
13, 500	54, 000	.022000	.002950	....	....	
14, 000	56, 000	.024500	.002500	....	....	
14, 500	58, 000	.027500	.003000	....	....	
15, 000	60, 000	.030750	.003250	....	....	
15, 500	62, 000	.034700	.003950	....	....	
16, 000	64, 000	.037500	.002800	....	....	
16, 500	66, 000	.0450	.007500	....	....	
17, 000	68, 000	.0500	.0050	....	....	
17, 500	70, 000	.0525	.0025	....	....	
18, 000	72, 000	.0600	.0075	....	....	
18, 500	74, 000	.0700	.0100	....	....	
19, 000	76, 000	.0900	.0200	....	....	
19, 500	78, 000	.1100	.0200	....	....	
19, 880	79, 520	.1650	.0550	....	....	Tensile strength.

General summary.

Tensile strength per square inch of original section	pounds..	79, 520
Elastic limit per square inch of original section	do...	23, 000
Elongation per inch after rupture	inch..	0. 2300
Elongation per inch under strain at elastic limit	do...	.000900
Reduction in diameter at point of rupture	do...	.004
Reduction in area after rupture, per centum of original section		30. 6
Position of rupture		″.90 from neck
Character of broken surface		granular, with belt of dull flaky metal across broken surface
Elongation of inch sections		″.20, ″.26

No. 692.

Marks, $\begin{smallmatrix}10\ R_1\ T\\ M\ T_6\ I\end{smallmatrix}$
Length, 4''.992.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000067	.000067	0.	....	
5,000	10,000	.000233	.000166	0.	....	
7,500	15,000	.000400	.000167	0.	....	
10,000	20,000	.000567	.000167	0.	....	
12,500	25,000	.000733	.000166	0.	....	
15,000	30,000	.001000	.000267	.000067	.000067	Elastic limit.
15,500	31,000	.001233	.000233	....	....	
16,000	32,000	.001467	.000234	....	....	
16,500	33,000	.001833	.000366	....	....	
17,000	34,000	.002700	.000867	....	....	
17,500	35,000	.003667	.000967	....	....	
18,000	36,000	.004667	.001000	....	....	
18,500	37,000	.005667	.001000	....	....	
19,000	38,000	.006100	.000433	....	....	
19,500	39,000	.006733	.000633	....	....	
20,000	40,000	.007333	.000600	....	....	
35,150	70,300	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	30,000
Compression per inch under stress at elastic limit	inch..	0.001000
Ultimate strength per square inch of original section	pounds..	70,300
Manner of failure		triple flexure

No. 693.

Marks, $\overset{10\ R,\ T}{M\ T,\ O}$

Length, 4''.992.

Diameter, ''.798.

Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000100	.000100	0.	....	
5,000	10,000	.000267	.000167	0.	....	
7,500	15,000	.000467	.000200	0.	....	
10,000	20,000	.000633	.000166	0.	....	
12,500	25,000	.000800	.000167	0.	....	
13,000	26,000	.000833	.000033	....	....	
13,500	27,000	.000867	.000034	....	....	
14,000	28,000	.000933	000066	....	....	Elastic limit.
14,500	29,000	.003333	.002400	....	....	
15,000	30,000	.002733	.000600	.001733	.001733	Deflected convex on the micrometer side of specimen.
15,500	31,000	.002833	.000100	....	....	
16,000	32,000	.003500	.000667	....	....	
16,500	33,000	.004500	.001000	....	....	
17,000	34,000	.005333	.000833	....	....	
30,980	61,960	....	....	....	....	Ultimate Strength.

General summary.

Elastic limit per square inch of original section ....pounds.. 28,000

Compression per inch under stress at elastic limit ....inch.. 0.000933

Ultimate strength per square inch of original section ....pounds.. 61,960

Manner of failure .... triple flexure

No. 694.

Marks, $\overset{10\ \text{R},\ \text{T}}{\text{M T, M}}$
Length, 4''.996.
Diameter, ''.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1,000	0.	0.	0.	0.	Initial load.
2,500	5,000	.000133	.000133	0.	....	
5,000	10,000	.000267	.000134	0.	....	
7,500	15,000	.000467	.000200	0.	....	
10,000	20,000	.000633	.000166	0.	....	
12,500	25,000	.000867	.000234	.000067	.000067	
13,000	26,000	.000900	.000033	....	....	
13,500	27,000	.000933	.000033	....	....	Elastic limit.
14,000	28,000	.001033	.000100	....	....	
14,500	29,000	.001133	.000100	....	....	
15,000	30,000	.001267	.000134	.000333	.000266	
15,500	31,000	.001867	.000600	....	....	
16,000	32,000	.002400	.000533	....	....	
16,500	33,000	.003100	.000700	....	....	
17,000	34,000	.003600	.000500	....	....	
17,500	35,000	.004333	.000733	....	....	
18,000	36,000	.005000	.000667	....	....	
18,500	37,000	.006000	.001000	....	....	
19,000	38,000	.006600	.000600	....	....	
19,500	39,000	.007067	.000467	....	....	
20,000	40,000	.007767	.000700	....	....	
34,600	69,200	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	27,000
Compression per inch under stress at elastic limit	inch..	0.000933
Ultimate strength per square inch of original section	pounds..	69,200
Manner of failure		triple flexure

No. 695.

Marks, $\overset{\text{10 R, T}}{\text{M R,}}$
Length, 4″.092.
Diameter, ″.798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000133	.000133	0.	....	
5, 000	10, 000	.000300	.000167	0.	....	
7, 500	15, 000	.000467	.000167	0.	....	
10, 000	20, 000	.000633	.000166	0.	....	
12, 500	25, 000	.000833	.000200	.000033	.000033	
13, 000	26, 000	.000867	.000034	....	....	
13, 500	27, 000	.000900	.000033	....	....	
14, 000	28, 000	.000967	.000067	....	....	Elastic limit.
14, 500	29, 000	.001667	.000700	....	....	
15, 000	30, 000	.002400	.000733	.001333	.001300	
15, 500	31, 000	.002633	.000233	....	....	
16, 000	32, 000	.002900	.000267	....	....	
16, 500	33, 000	.003300	.000400	....	....	
17, 000	34, 000	.003867	.000567	....	....	
17, 500	35, 000	.004533	.000666	....	....	
18, 000	36, 000	.004933	.000400	....	....	
18, 500	37, 000	.005833	.000900	....	....	
19, 000	38, 000	.007333	.001500	....	....	
39, 380	78, 760	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds..	28, 000
Compression per inch under stress at elastic limit	inch..	0. 000967
Ultimate strength per square inch of original section	pounds..	78, 760
Manner of failure		triple flexure

No. 696.

Marks, $\overset{10\,R_1\,T}{M\,R_{10}}$
Length, 4".102.
Diameter, ".798.
Sectional area, .50 square inch.

Applied loads.		Compression per inch.	Successive compression per inch.	Permanent set.	Successive permanent set.	Remarks.
Total.	Per square inch.					
Pounds.	*Pounds.*	*Inch.*	*Inch.*	*Inch.*	*Inch.*	
500	1, 000	0.	0.	0.	0.	Initial load.
2, 500	5, 000	.000100	.000100	0.	....	
5, 000	10, 000	.000267	.000167	0.	....	
7, 500	15, 000	.000467	.000200	0.	....	
10, 000	20, 000	.000633	.000166	0.	....	
12, 500	25, 000	.000800	.000167	.000033	.000033	
13, 000	26, 000	.000833	.000033	....	....	
13, 500	27, 000	.000867	.000034	....	....	
14, 000	28, 000	.000900	.000033	....	....	
14, 500	29, 000	.000933	.000033	....	....	
15, 000	30, 000	.001000	.000067	.000033	0.	
15, 500	31, 000	.001033	.000033	....	....	Elastic limit.
16, 000	32, 000	.002333	.001300	....	....	
16, 500	33, 000	.002833	.000500	....	....	
17, 000	34, 000	.003667	.000834	....	....	
17, 500	35, 000	.004567	.000900	....	....	
18, 000	36, 000	.005167	.000600	....	....	
18, 500	37, 000	.006000	.000833	....	....	
19, 000	38, 000	.006667	.000667	....	....	
39, 670	79, 340	....	....	....	....	Ultimate strength.

General summary.

Elastic limit per square inch of original section	pounds	31, 000
Compression per inch under stress at elastic limit	inch..	0. 001033
Ultimate strength per square inch of original section	pounds	79, 340
Manner of failure		triple flexure

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